Title
Sensitive Subjects: Bodily Awareness, Pain, and the Self

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Publication Date
2019

Peer reviewed|Thesis/dissertation

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Bodily Awareness, Pain, and the Self

by

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A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Philosophy

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor John Campbell, Co-chair
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Professor Michael Martin
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Summer 2019

Abstract

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Imagine that you feel a pain in your hand, notice the movement of your limbs as you tie your shoes, or attend to your feeling of balance as you ride a rollercoaster. These phenomena are exercises of *bodily awareness*, the type of awareness one has of one's body 'from the inside.' My dissertation is an investigation into the nature of bodily awareness. In it I describe and attempt to resolve a number of serious puzzles raised by the philosophical and scientific investigation of bodily self-awareness. My solution to these puzzles is to develop a novel account of bodily awareness. On the view I develop bodily awareness is basic, irreducible to other mental capacities such as perception and introspection. Only by treating bodily awareness as basic, I argue, can we understand what is distinctive about it.

I begin by establishing the *unity* of bodily awareness. Though bodily awareness is comprised of sensory systems that are physically, functionally, and phenomenologically distinct, these distinct sensory systems nevertheless generate a single *form of awareness.* What unifies bodily awareness and distinguishes it from other forms of awareness such as vision and audition is its phenomenological structure. Whereas other forms of sensory awareness are perspectival, serving to make one aware of objects as they relate to one's body, bodily awareness is non-perspectival, serving to make one aware of one's body itself. The different aspects of bodily awareness, then, correspond to those bodily features that one can become aware of in this non-perspectival manner.

Having characterized the unity and structure of bodily awareness I go on to consider its relationship to other forms of conscious awareness, in particular perception and introspection. Some of the most recalcitrant puzzles about bodily awareness stem from the fact that it resembles both our perceptual awareness of the external world (in virtue of making us aware of a physical object) and our introspective awareness of our own minds (in virtue of licensing first-personal judgments concerning what we are aware of in it). Since these forms of awareness are typically regarded as exclusive, this makes it difficult to locate bodily awareness with respect to our other mental faculties. I address this issue by arguing that bodily awareness is *sui generis*, irreducible to either perception or introspection, though it shares key features with each.

Another characteristic feature of bodily awareness is that involves a *feeling of bodily ownership*, or a sense that what one is aware of in bodily awareness is one's own body. One of the chief ways researchers try to understand this feeling of bodily ownership is by looking at subjects in whom it is impaired. In startling disorders such as somatoparaphrenia and depersonalization subjects report feeling alienated from their own bodies. I explore these ownership disorders and provide a novel account of them, one which allows us to hold onto the intuitive thought that bodily awareness invariably presents our bodies to us as our own. I do so by distinguishing a feeling of *affective ownership* from a feeling of *minimal ownership*, arguing that it is the former rather than the latter that is impaired in characteristic ownership disorders.

Finally, I address some issues raised by bodily sensations such as pain. Bodily pain strikes many philosophers as deeply paradoxical. The issue is that pains seem to bear both physical characteristics, such as a location in the body, and mental characteristics, such as being subjective entities to which subjects have privileged and peculiar epistemic access. In this final chapter I clarify and address this alleged paradox of pain. I begin by showing how a further assumption, *Objectivism*, the thesis that what one feels in one's body when one is in pain is something mind-independent, is necessary for the generation of the paradox. Consequently, the paradox can be avoided if one rejects Objectivism and instead adopts the *Embodied View of Pain*, a novel metaphysical account on which pains are constitutively mind-dependent features of parts of a subject's body.

Contents

Acknowledgments

During my time at Berkeley I have had the great fortune of belonging to a remarkable community of friends, colleagues, and scholars. Writing this dissertation has been a process of more than 5 years, with many detours along the way. As a result, I cannot possibly acknowledge every debt that I have accrued, but I will try my best. To those I have left out, I can offer only my apologies, and the solace that whatever mistakes remain in this work cannot be traced back to you.

Among the faculty at Berkeley I would like in particular to acknowledge Timothy Clarke, Tim Crockett, Shamik Dasgupta, Hannah Ginsborg, Wesley Holliday, Katharina Kaiser, Niko Kolodny, John MacFarlane, Veroniqué Munoz-Dardé, Alva Noë, Kristin Primus, R. Jay Wallace, Daniel Warren, and Seth Yalcin. These individuals have contributed to my growth as a philosopher and put me in a position to write this work. From seminars to colloquia to conservations at our department's opulent wine and cheese receptions, they have helped to make me feel like a genuine participant in the philosophical enterprise. I would like to make special mention of Barry Stroud. Barry, along with Hannah, led my first-year seminar. I can only liken the experience of doing philosophy with Barry to being thrown into the deep end of the pool: prior to it, one has little idea just how deep the thing is. If anyone in the history of philosophy has ever managed to get to the heart of the matter, it was Barry.

One of the great joys of being an academic is belonging to a larger community of scholars. Beyond Berkeley, my studies have put me into contact, either in person or electronically, with faculty members from a number of different institutions from all across the world. Here I acknowledge some who have made a contribution to this thesis. This list includes Murat Aydede, Frédérique de Vignemont, Susanna Siegel, Adam Pautz, Bence

Nanay, Jonathan Cohen, Colin Klein, Jennifer Corns, Emma Borg, Wayne Wu, David Chalmers, José Luis Bermúdez, Hong Yu Wong, Ophelia Deroy, and Alisa Mandrigin, as well as several anonymous referees, whose work must remain clandestine.

Three members of the Berkeley faculty deserve special acknowledgment: the co-chairs of my dissertation committee, John Campbell and Geoff Lee, and Mike Martin, a member of my dissertation committee and a mentor throughout my time in graduate school. I cannot imagine having completed this thesis without them.

Working with John Campbell has been an honor and a pleasure. John has a wonderfully creative and restless philosophical mind. His primary trait as a philosopher is focusing, directly and unerringly, on the big picture, the key issue at stake in any debate. A related philosophical virtue is his open-mindedness. For John, nothing in philosophy is too obvious to question or too questionable to explore. In his advising, John never allowed me to lose sight of the importance of philosophy, its vitality, and its inherent connection to the deepest problems of human existence.

Geoff Lee has one of the sharpest philosophical minds that I have ever encountered. His eye for detail and his architectonic understanding of philosophical problems helped me to work through some of the thorniest issues that I took up in this project. While bodily awareness is not one of the areas Geoff's own work focuses on, he was enthusiastically supportive of this project from the very beginning.

Finally, I must acknowledge a deep debt of gratitude to Mike Martin. In his writings and in our conversations he has shaped this project more than perhaps any other person. My interest in the topic of bodily awareness traces back to reading his seminal essays on the subject. Without his work and feedback, this thesis would not exist. Mike is a generous and committed mentor to young philosophers, an encyclopedia on all matters philosophical, and a good-natured colleague. Mike also has perhaps the most important trait an advisor can have: a steadfast refusal to accept anything less than the best work you are capable of doing.

It is often said that one learns more from one's peers in graduate school than from the graduate program itself. This was certainly true in my case. For contributing, through conversation and company, to the generation of this thesis, I must acknowledge Nicholas Gooding, Nicholas French, Sophie Dandelet, Tyler Haddow, Rachel Rudolph, Lisa Clark, Antonia Peacocke, Melissa Fusco, Katherine Ammirati, Anna Vlasits, Luke Jensen, Jim

Hutchinson, Kirsten Pickering, Arc Kocurek, Richard Lawrence, Emily Perry, Jackson Kernion, Sven Neth, Urte Laukaityte, Joe Kassman-Tod, Clara Lingle, Jennifer Mackenzie, Greyson Abid, and Mike Arsenault. I must make special mention of Justin Vlasits and Jeff Kaplan, two members of my cohort and good friends. Our endless discussions during out first few years of graduate school sharpened my skills immensely. Austin Andrews, Umrao Sethi, and Peter Epstein deserve special mention for creating a vibrant community around the philosophy of mind during my time at Berkeley. Dave Suarez, Jens Pier, Zac Irving, and Julian Bacharach visited the department during my time here and left their mark on it, and me.

I would also be remiss if I failed to acknowledge all of the help that I received from the dedicated and friendly staff in the philosophy department. Dave Lynaugh, Janet Groome, Maura Vrydaghs, and Kathryn Dernham have helped me in a thousand ways in my time at Berkeley. Thanks.

A few dear friends deserve special acknowledge for the contributions they have made to this project, and to my life. They are Caitlin Dolan, Quinn Gibson, Ethan Jerzak, and Alex Kerr. Caitlin Dolan has been a close friend and a valuable interlocutor for the entire time I've been a graduate student. Her patience and wisdom have made me a better thinker and person. For always showing me how to see things in a different way, I thank her. Quinn Gibson has taught me more than anyone about how to enjoy the finer things in life: food, drink, music, and revelry. In philosophy, discussions with Quinn have greatly expanded my understanding of the philosophy of psychiatry, a field in which we've begun a collaborative project. May our collaboration continue far into the future. Ethan Jerzak is also a member of my first-year cohort, the most disputatious member of that disputatious lot. His embodiment of the Socratic ideal, in all of its aporetic glory, is unmatched by anyone I have ever known. Finally, Alex Kerr has been my closest friend and confidant for the last 8 years. His judicious insight on all matters has influenced every aspect of this project, and saved me from literally hundreds of errors. He has helped me more times and in more ways that I can possibly acknowledge or repay. Thanks.

I did not emerge onto the Berkeley campus *ex nihilo.* Prior to being a graduate student at Berkeley, I was an undergraduate at the University of Cincinnati, which has what must be one of the most underrated philosophy departments in the world. I knew nothing of this fact when I enrolled, but from the first philosophy classes I took, I was hooked. I would like to thank in particular Christopher Gauker and Thomas Polger, both of whom have

been instrumental to my academic career. I recall a fateful meeting in Chris' office where he encouraged me to apply to Berkeley, a school I never thought I'd have a chance of getting into. I recall many such meetings in Tom's office. For that encouragement, I thank them both immensely.

I did not emerge onto the Cincinnati campus *ex nihilo* either. Instead, I owe my existence—my being—to my parents, Lee Ann and Lew Bradley. I think is fair to say that they did not know what I was getting into when I decided to major in philosophy and pursue a career in it. I think it's fair to say that I didn't either. Regardless, they have encouraged me from my earliest years to pursue my intellectual passions. They provided me with a home, supplied me with books, and have always indulged my eccentricities. I dedicate this thesis to them.

Chapter 1

Introduction

Each of us has a distinctive experiential perspective on our own body in *bodily awareness*, our conscious awareness of our body 'from the inside.'[1] Bodily awareness includes our proprioceptive and kinesthetic awareness of the position and movement of our limbs; the experience of bodily sensations such as pains and itches, including interoceptive sensations such as hunger and thirst; and our vestibular sense of balance and orientation. As a rough first pass, what these different phenomena have in common is that each involves the conscious awareness of some aspect of one's own body. One of the primary tasks of the thesis will be to work out a detailed account of bodily awareness, one which explains why these seemingly disparate phenomena together comprise a single form of conscious awareness. A related task is to explain, in non-metaphorical terms, what it means to say we are of our bodies 'from the inside.'

Though they have come into relief primarily in recent decades, some of the philosophical problems posed by bodily awareness have been with us for centuries. In a much quoted passage from the *Meditations* René Descartes says:

[1]The philosophical and scientific literature on bodily awareness is too vast to cover in its entirety, but I will mention some key texts here. For a contemporary philosophical survey see Vignemont (2015). Merleau-Ponty (2013) is a classic text in the phenomenological tradition. Bermúdez, Eilan, and Marcel (1995) is an influential collection of essays on the subject. Blanke (2012) is a good overview of some relevant scientific results. Any standard neuroscience textbook such as Kandel et al. (2013) will contain the basic neuroscientific facts about the sensory systems involved in bodily awareness.

> Nature also teaches me, through these sensations of pain, hunger, thirst and so on, that I (a thinking thing) am not merely in my body as a sailor is in a ship. Rather, I am closely joined to it—intermingled with it, so to speak—so that it and I form a unit. If this were not so, I wouldn't feel pain when the body was hurt but would perceive the damage in an intellectual way, like a sailor seeing that his ship needs repairs. (Descartes 1984, 56).

For my purposes, the key point of Descartes' remarks lies in the recognition that how we experience our body in bodily awareness differs markedly from how we experience objects and qualities in other sensory modalities. As he puts it, we are "intermingled … so to speak" with our bodies while we "perceive … in an intellectual way" objects using our other senses. How these remarks fit into Descartes' dualistic metaphysics is a contentious question, one that I will not here take up.[2] For one does not have to be a Cartesian in order to see something in the distinction he is here drawing.

Though historical in origin, many theoretical issues concerning our experience of our own bodies have come into relief only in recent decades. This is due, in large part, to an explosion of scientific research on bodily awareness and its deficits. Psychologists, neuroscientists, cognitive scientists, and other researchers are working to uncover the neurological underpinnings of our capacities for action, sensation, and self-awareness.[3] Recently developed research paradigms such as the Rubber Hand Illusion enable researchers to probe aspects of bodily awareness, such as the feeling of bodily ownership, that have hitherto evaded careful investigation (Botvinick and Cohen 1998; Bottini et al. 2002; Costantini and Haggard 2007; Ehrsson et al. 2007). Taken together, this wealth of empirical results promises to aid in the the development of sophisticated models of these phenomena and their interrelation, revolutionizing our understanding of our bodily selves. Recent philosophical work bodily awareness has drawn on this research, and is a model of empirically informed, interdisciplinary philosophy of mind.[4] This thesis is a contribution to this burgeoning research program.

[2]For recent discussion of Descartes' views on our experiential relationship to our body see Simmons (2017) and Chamberlain (2018b).

[3]For a lively popular introduction to some of this work see Ananthaswamy (2015). For a small but representative sample of empirical work on these subjects see Mandrigin and Thompson (2015). For a review of neuroscientific work on the brain regions that underpin self-awareness see Vogeley and Gallagher (2011).

[4]See Vignemont (2018) and the essays in Bermúdez (2018a) for the state-of-the-art.

In the following four chapters I address a number of distinct problems raised by investigation into bodily awareness. In Chapter 2 I discuss puzzles relating to its unity and structure: what ties the disparate aspects of bodily awareness together into a single form of awareness. In Chapter 3 I discuss the relationship between bodily awareness and two more familiar forms of conscious awareness, perception and introspection. In Chapter 4 I take on one of the distinctive features of bodily awareness, the *feeling of bodily ownership*, or the sense we have of our bodies as our own. Finally, in Chapter 5 I address the question of how pain can be both bodily and subjective. The picture that emerges of bodily awareness through these four chapters is that of form of awareness that is neither wholly 'outer' nor wholly 'inner.' Because the body serves as the nexus between the 'outer' world of the environment and the 'inner' world of the mind, attempts to understand as a degenerate form of either 'outer' or 'inner' awareness are bound to fail. Instead, we must begin with the phenomenon itself and build up an account of bodily awareness suited to its particularities. That is the aim of this dissertation.

Chapter 2

The Structure of Bodily Awareness

2.1 Introduction

In this chapter I articulate and address some of the most basic philosophical questions raised by the study of bodily awareness. I focus on two issues: the *Unity Puzzle*, or the question of what unites the various sensory capacities mentioned at the outset in a single form of awareness, and the *Spatiality Puzzle*, or the question of how the spatial character of bodily awareness differs from the spatial character of perceptual modalities such as visual awareness. These puzzles connect up with the passage from Descartes that I quoted earlier insofar as they help us to understood the difference between how our body shows up to us in bodily awareness and how external objects show up to us in perception. I argue that the Unity Puzzle and Spatiality Puzzle have a common solution insofar as the unity of bodily awareness consists in the fact that its constituent elements—proprioception/kinesthesia, bodily sensations, and the sense of balance—are presented in form of awareness with a unique spatial structure. In this way, both of these puzzles concern the structure of bodily awareness.

In §2.2, I spell out the notion of bodily awareness in more detail, defining the key terms I will employ throughout this thesis and grounding them in the empirical literature. In §2.3 I formulate the Unity Puzzle in greater depth and sketch a solution to it by appealing to the idea that bodily awareness is a distinct *form of awareness.* In §2.4 I elaborate on this solution by articulating

the notion of a *structural feature* of a form of awareness.

2.2 Bodily Awareness, A Primer

To clarify my subject I begin with a brief exposition of some terminology I will be employing throughout the thesis. Any area of study involves some amount of terminological wrangling but the study of bodily awareness in particular has been hampered by terminological confusion since its inception. For instance, Sean Gallagher charts the complex and fraught history of the terms *body image* and *body schema*, two of the central theoretical constructs in the study of bodily awareness (Gallagher 2005, Ch. 1).[1] As he says, '[a]lthough many studies have noted the terminological confusions and conceptual difficulties related to 'body image' and 'body schema' no consensus concerning terminology of precise definition has emerged' (19). Surveying only a sample of the extant literature, Gallagher identifies at least eight different ways of using the terms 'body image' and 'body schema' (20-21). In some instances, what one theorist calls 'body image' another calls 'body schema' and vice versa. Here, for instance, is Gallagher characterizing the views of Kolb (1959) and Cumming (1988):

> Kolb (1959: 89) defines the body schema as a 'postural image', a 'perceptual image', or a 'basic model of the body as it functions outside of central consciousness' According to Kolb this schema, image, or model is dynamic; it 'modifies incoming sensory impulses'. He explains, however, that the body schema is only one aspect of the body image […] Cumming (1988), however, does the reverse: the body image is considered an aspect of the body schema. (2005,21)

Clearly there is little consensus in the literature on how, exactly, these terms are defined or related.

Gallagher's own solution to the problem is to retain the problematic terms but stipulate his own meanings for them. As he regiments their use:

> A *body image* consists of a system of perceptions, attitudes, and beliefs pertaining to one's own body. In contrast, a *body schema*

[1] See also Vignemont (2018), Chapter 5 for a similar review.

> is a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring. (2005, 24)

For Gallagher, the body image is a set of at least potentially conscious phenomena, while the body schema picks out certain unconscious motor routines. While Gallagher's use of these terms clarifies them to some extent, I reject his terminology for two reasons. First, I question the theoretical utility of such these categories. Even on Gallagher's use, the body image encompasses 'occurrent perceptions' as well as "mental representations, beliefs, and attitudes where the object of such intentional states [...] is or concerns one's own body" (24). I can see no antecedent reason to believe that such a heterogenous class will prove theoretically useful. Second, these terms have so much historical baggage and so many latent associations for theorists that they cannot possibly serve to clarify disputes and indeed tend to foster them. For this reason I eschew the use of terms 'body image and 'body schema' almost entirely throughout this thesis. Rather than adding to the already baroque history of attempts to settle upon a meaning for these expression, I will instead introduce more specific terms that denote elements of what theorists have cobbled together under these headings and will advert to use of these expressions only when quoting or paraphrasing theorists who employ them.

The basic theoretical construct in my account is bodily awareness itself. Indeed, one of the primary aims of this project is to make the case for the utility of this notion, and the proof of this will be in the theoretical fruit that it bears. But to initially fix ideas, bodily awareness is the type awareness we have of our bodies that is independent of the the 'five senses.' While we can see, hear, touch, taste, and smell our own bodies, these are not exercises of bodily awareness.[2] However, even if you extinguish each of these senses you still have ways of experiencing your body available to you. For instance, you would be able to feel the position and movement of your limbs, experience bodily sensations such as pains and itches, and feel the orientation of your body. These are examples of what I am calling bodily awareness.

Just to be completely explicit, bodily awareness is, necessarily, a conscious phenomenon. What I am here concerned with are a number of features concerning *phenomenology*, or the systematic investigation of how things appear to, or show up for, a human subject in conscious awareness.[3] Of course,

[2]Touch is a complicated case. I say more about it later in the section.

[3]The *locus classicus* for the phenomenological study of the body is Merleau-Ponty (2013). See Gallagher and Zahavi (2012) for an up-to-date introduction to phenomenology.

to say that my topic is our experience of our bodies is not to deny the relevance of non-conscious facts about the operation of our brain and nervous system. It should go without saying that our conscious awareness of our body in proprioception, kinesthesia, the bodily sensations, and the sense of balance is grounded in the complex operations of the brain. But while the findings of such empirical investigation are far from irrelevant to the philosophical study of bodily awareness, they are not its primary object of study.

Indeed, part of the problem with terms such as 'body image', 'body schema', 'body map', etc. is that they are often used to denote non-conscious—or at least not currently conscious—phenomena or, even worse, are used in such a way that it is indeterminate whether the construct is picking out something conscious or something unconscious. By employing such terms, theorists are able to gloss over the philosophical difficulties raised by the study of consciousness. However, insofar as the subject of investigation is our experience of our bodies, failing to own to address these issues inevitably proves distortive. It is with this background in mind that I explicitly make my object of study our conscious awareness of our bodies, and draw upon scientific research only insofar as it illuminates our understanding of that conscious awareness. To say this is not to devalue investigation into the sub-personal mechanisms that underpin our experience of our bodies, merely to clarify that this is not my subject.

Another crucial point of clarification concerns the relationship between bodily awareness and attention. As many theorists have noted, we do not often pay attention to our bodies when we going about our daily lives. As Frédérique de Vignemont puts it, echoing a point made by many others, "while typing on a laptop, we do not vividly experience our fingers on the keyboard and our body seems only to be at the background of our awareness" (Vignemont 2018, 5). But to say that bodily awareness is in the background is not to say that at it is not there. If you choose to, you can attend to your awareness of the position and movement of your fingers as you type or the sensations generated by their contact with the keys. Indeed, these elements of experience are ever present, in just the same way that our visual experience presents a much richer visual scene than we are able to appreciate at any given moment.[4]

Bodily awareness, as I am characterizing it, consists of several distinct

[4]This claim about visual awareness is a matter of controversy. Prinz (2012), for example, defends a version of the idea that attention is necessary for consciousness.

sensory systems. In §2.3 I will take up the question of what ties these phenomena together as aspects of bodily awareness, but at the moment I simply want to introduce them. On my account, there are three distinct aspects of bodily awareness:

- *Proprioception/Kinesthesia* Your awareness of the disposition and movement of your body, e.g. awareness of your hands moving as you type.
- *Bodily Sensations:* Your awareness of various sensations that are located (possibly diffusely) in regions of your body, e.g. awareness of a burning pain in your ankle.
- *The Vestibular Sense:* Your awareness of the balance and orientation of your body, especially your head e.g. awareness that one is upside down while riding a roller-coaster.

I will now say a bit more about these aspects of bodily awareness, and also justify my exclusion of other phenomena from the list, most controversially touch.

Proprioception is defined by neuroscientists as "conscious awareness of the posture and movements of our own body" (Kandel et al. 2013, 475). Proprioception as a form of awareness derives its name from *proprioceptors*, or sensory cells that are distinctively sensitive to one's own body (hence, *proprio*—one's own) (Kandel et al. 2013, 475). The proprioceptors that primarily subserve proprioception are located in the muscles and skeleton and include primary and second muscle spindles, Golgi tendon organs, joint capsule receptors, and stretch-sensitive free endings (2013, 480). These calls are *mechanoreceptors*, sensory neurons sensitive to various mechanical stimuli. For instance, muscle spindle receptors are sensitive to muscle stretch, while joint receptors are sensitive to joint angle (2013, 482–3). These and other somatosensory cells project to the spinal cord *via* dorsal root ganglia where they project on the thalamus and then the cortex, particularly primary somatosensory cortex (S1) (2013, 488–91).

Kinesthesia is a subclass of proprioception, namely proprioceptive awareness specifically of the movement of one's own body. In fact, movement plays a key role in our overall proprioceptive awareness. Roll, Roll, and Velay (1991), for instance, detail a number of experiments which demonstrate

the profound sensory effects of stimulating muscles so as to simulate movement. This type of stimulation can generate illusions of movement as well as affect balance and and even influence visual perception (1991, 113). In addition to the operation of various mechanoreceptors, an important contribution to kinesthetic awareness derives from *efferent* signals originating in the brain, originating from one's outgoing motor commands (Kandel et al. 2013, 483; Giummarra et al. 2008, 145). In these ways, awareness of bodily movement exerts a profound influence on both our experience of our body as well as our perception of the external world.

Bodily sensations are difficult to define. Roughly speaking, bodily sensations are sensory qualities that one experiences in some part or region of one's body in bodily awareness. Bodily sensations are a heterogenous class, including pain, itch, warmth, cold, tactile sensations, as well as interoceptive sensations such as nausea and hunger (Craig 2002). Sensations can be more or less strongly localized in a particular bodily region. At one extreme are highly localized sensations such as the pain sensation caused by being pricked with a pin or stimulating a single periphery fiber (Torebjork and Ochoa 1980). At the other extreme are highly diffuse sensations such as nausea or certain types of chronic pain, which cannot be easily attributed to any specific body part or region (Craig 2002, 664). At the limit are certain sensations which seem to pertain to the body as a whole, such as dizziness or the feeling of cold when one's body temperature as a whole is dropping. Throughout the thesis I use pain as a paradigmatic instance of a bodily sensation, acknowledging up front that this glosses over significant differences among bodily sensations. In particular I will have little to say about *interoceptive* sensations such as hunger or nausea or *tactile* sensations, since I will not be focusing much on the sense of touch.

Non-chronic pain is generally the result of the activation of a subclass of somatosensory receptors, the *nociceptors*, or sensory receptors sensitive to noxious (hence, *noci*) stimuli, in particular mechanical disturbances, temperature extremes, or certain chemicals (Kandel et al. 2013, 531; McMahon et al. 2013, Ch. 1). There are two primary kinds of nociceptor, C- and A-fibers, in particular Aδ and Aβ (2013, 2–5) which differ primarily in their conduction velocity, with the myelinted A-fibers signaling more quickly than the unmyelinated C-fibers. Nociceptive pain is generally (though not always) localized to a relatively determinate region of the body. This localization occurs in part because nociceptive fibers project to some of the same somatosensory areas as proprioceptive fibers. Like with proprioception, there

is a nociceptive pathway that originates in the spinal cord, proceeds through the thalamus, and ends up in somatosensory cortex (Kandel et al. 2013, 534-545). However, nociceptors also project to other regions of the brain, in particular some of those regulating emotion such as the anterior cingulate cortex (Rainville et al. 1997).

The vestibular sense is our awareness of the orientation of parts of our body, and in particular our head, relative to a dominant gravitational field (Eilan, Marcel, and Bermudez 1995, 13). The vestibular sense is primarily subserved hair-like receptors located in the inner-ear. These receptors are sensitive the movement of fluid through the *semicircular canals*, which provide information about the orientation of the head along the three spatial dimensions, as well as the movement of *otoliths*, or small rocks located in the *utricle* and *saccule*, which stimulate the sensory cells when there are changes in acceleration (Wong 2017a; Presti 2016, 185–6). Rarely discussed by the philosophers (though see Wong (2017a)), the vestibular sense is nevertheless of obvious importance, and its disruption can have significant effects both on one's ability to act and on one's conscious experience. To confirm, one need only recall the experience of being dizzy.

This brief overview establishes the topics that I will be focusing on, but I also want to say something about some phenomena that I am not including under the heading 'bodily awareness.' As I am using the term, bodily awareness does not involve:

- Cognitive representations of the body, be they linguistic, conceptual, or imagistic.
- Information about the body that is operative only in non-conscious, subpersonal systems which underpin proprioceptive, kinesthetic, sensational, or vestibular experiences.
- Information about the body that is operative in wholly non-conscious, subpersonal systems such as those regulating pupil dilation or insulin production.
- Perceptual awareness of the body from sources other than those listed above, e.g. from the 'five senses.'

As to the first point, bodily awareness does not include every conscious experience we have that is directed towards the body. In particular, it does

include cognitive representations such as thoughts or images. For instance, factual knowledge that one's own body has two arms and two legs, even when consciously entertained, does not constitute bodily awareness, nor does a 'mental image' of what one's body looks like that one remembers from an anatomy textbook or a mirror.

Somewhat more substantively, bodily awareness is to be contrasted with subpersonal, non-conscious information about the body. This contrast is particularly clear and uncontroversial in cases where such information makes no contribution to our awareness, as is the case with many physiological process regulating the body's homeostatic functions. For instance, many now think that the brain plays a role in regulating blood sugar levels (Deem et al. 2017), but one is generally not conscious of any of this processing. At most, one will feel light-headed if one's blood sugar levels get too low. So a criterion for something's being an aspect of bodily awareness is that it is the sort of thing that an ordinary subject is in a position to notice about their own experience of their bodies. Most bodily functions that receive top-down regulation from the brain do not meet this condition, and so are not aspects of bodily awareness.

A final commitment, which will be defended at length in §2.3.2, is the exclusion of the 'outer senses', in particular vision. This exclusion is particularly controversial in light of the fact that a number of prominent theorists have argued that a distinction between 'inner' proprioceptive awareness and 'outer' exteroceptive awareness is in some way artificial. For instance, the iconoclastic perceptual psychologist James Gibson denied that there was any such thing as proprioception, if that term is intended to pick out a distinct sensory system or proper subset of sensory systems. On Gibson's view, every sensory modality carries both exteroceptive and proprioceptive information, information that pertains to the environment and information that pertains to the subject's body. Here is a representative passage:

> A deep theoretical muddle is connected with proprioception. … In my view, proprioception can be understood as egoreception, as sensitivity to the self, not as one special channel of sensations or as several of them. I maintain that all the perceptual systems are propriosensitive as well as exterosensitive, for they all provide information in their various ways about the observer's activities. The observer's movements usually produce sights and sounds and impressions on the skin along with stimulation of the muscles,

> the joints, and the inner ear. Accordingly, information that is specific to the self is picked up as such, no matter what sensory nerve is delivering impulses to the brain. (Gibson 1979, 108; See Bermúdez 2018a for discussion.)

In insisting so heavily that bodily awareness is a distinctive form of awareness, I might be accused of falling into Gibson's "deep theoretical muddle." But in fact, I do not think that admitting the existence of bodily awareness results in the kind of muddle that Gibson was worried about.

More recently, theorists have a raised a version of Gibson's challenge by appealing to idea that bodily awareness is constitutively *multimodal* (Vignemont 2014; Wong 2017b). For instance, Frédérique de Vignemont argues that because "the body senses fail to fully account for the content of bodily experiences" we must adopt the view "that bodily awareness is constitutively multimodal—and in particular, that bodily awareness is constitutively visual" (2014, 990). By this, de Vignemont means that visual information is part of the normal etiology of bodily awareness, so that if visual information about the body is absent—as it is in blind subjects—the character of bodily awareness differs from that of normally sighted subjects (2014, 1006–10). On this view, visual information is on a par with proprioceptive information in the genesis of bodily awareness.

If this is so then my exclusion of vision from the list of aspects of bodily awareness will just have been a mistake, for vision, no less that proprioception or the vestibular sense, would be a constituent of our experience of our bodies 'from the inside.' However, the results that de Vignemont cites do not show that vision is an aspect of bodily awareness in just the same sense in which proprioception, kinesthesia, bodily sensations, and the vestibular sense are. The fact that visual input *influences* our proprioceptive awareness of our body does not show that visual awareness is itself an aspect of bodily awareness. As I shall go on to argue in §2.3.2, neither the existence of significant visual influence on proprioception nor the differences in the bodily awareness of blind and sighted subjects substantiate the claim that visual experience is itself an aspect of bodily awareness.[5] In particular, while there there is a perfectly good sense in which bodily awareness is multimodal, and takes as input visual information, there is also a perfectly good sense in which bodily awareness and visual perceptive awareness remain distinct forms of

[5]Note that I am not attributing this claim to de Vignemont herself, merely addressing a potential consequence some might draw from her discussion.

awareness. The influence of vision on bodily awareness does not require us to erase the distinction between the two forms of awareness, merely to clarify it.

The case of touch presents a special challenge. Touch, it has long been recognized, has both an objective or perceptual and a subjective or sensational component. This distinction was drawn out by Thomas Reid in §5.2 of the *Inquiry into the Human Mind* (2007). There Reid remarks that in touch we can observe a distinction between the qualities of the objects that we perceive by touch and the sensation produced in us by them. He says:

> It is quite different when [a man] leans his head gently against the pillar; for then he will tell you that he feels nothing in his head but feels hardness 'in the stone'. Doesn't he have a sensation in this case too? Undoubtedly he has; but it is a sensation that nature intended only as a sign of something in the stone; and accordingly our man instantly fixes his attention on the thing signified, and would find it extremely difficult to attend to his sensation enough to be convinced that there is any such thing distinct from the hardness it signifies. But however hard it may be to attend to this elusive sensation, to stop it from whipping past and pull it apart from the external quality of hardness in whose shadow it is apt immediately to hide itself, this is what a philosopher or scientist must become able to do, through effort and practice. (2007, 33)

In other words, though we naturally attend to the qualities of the objects that we touch—their hardness, say—there is always a subjective component, a sensation of hardness, there to be attended to if we only we are careful enough to do so.

More recently, Brian O'Shaughnessy and M.G.F. Martin have articulated and defended the idea that there is a constitutive connection between bodily awareness and touch (O'Shaughnessy 1989; Martin 1992). As O'Shaughnessy evocatively puts it, bodily awareness and touch are "[a]s it were, mirror-image senses" with "[o]ne sense leading us outwards beyond ourselves, the other taking us backwards into ourselves, the latter being the means and form taken by the former" (O'Shaughnessy 1989, 51–52). For instance, one can have tactile awareness of the shape and density of a glass that one is holding only in virtue of the fact that one has proprioceptive awareness of

one's hand as being wrapped around the glass and one has tactile sensations in the portion of the hand in contact with the glass (Martin 1992, 200). If you extinguish such bodily awareness, you thereby extinguish the sense of touch. In this way, the sense of touch constitutively depends on bodily awareness.

These facts might lead one to wonder whether, as O'Shaughnessy puts it, with bodily awareness and touch "we may not be dealing with two modes of a single sense" (1989, 52). On this model, the touch and bodily awareness are two poles of the same form of awareness, one directed out into the world, the other directed in towards one's body. However, O'Shaughnessy rightly rejects this idea: despite their constitutive interconnection, bodily awareness and touch are distinct forms of awareness. The primary reason for this is that bodily awareness can operate in the absence of a sense of touch, since one retains bodily awareness even in the absence of the tactile sensations on which the sense of touch constitutively depends. A subject who is floating in zero gravity and not touching anything could still tell, even with their eyes closed, whether their arms are crossed or whether their foot hurts. These forms of bodily awareness do not depend on a sense of touch in the way that a sense of touch depends on bodily awareness. So despite their intimate relationship, and in particular the constitutive dependence of one on the other, touch and bodily awareness should be regarded as different forms of awareness. Hence, for purposes of this thesis, I classify the objective or perceptual pole of touch as a distinct perceptual modality, and so not an aspect of bodily awareness. I classify the subjective or sensational components as bodily sensations, and so an aspect of bodily awareness.

My exclusion of vision and touch from bodily awareness raises a more general and fundamental question: *what justifies treating proprioception, kinesthesia, the bodily sensations, and the vestibular sense as a unified form of conscious awareness in the first place?* Absent a principled answer to this question, the inclusion or exclusion of any particular sense from the list of aspects of bodily awareness will seem at least somewhat *ad hoc.* Hence, my first task is to establish the *unity* of bodily awareness. I take this up in the following section, in which I attempt to provide a principled explanation of why the different sensory systems that I have bundled together under the heading of bodily awareness deserve to be so classified.

2.3 The Unity Puzzle

In characterizing my topic, the attentive reader will have noticed that I discussed several distinct phenomena, namely proprioception, kinesthesia, the various bodily sensations, and the senses of balance and orientation. These phenomena are distinct in several ways. First, they are *phenomenologically* distinct: it feels very different to be proprioceptively aware of one's clenched fist than it does to feel a pain in that same hand. Second, these aspects of bodily awareness are subserved by different sensory systems and involve different types of receptors. For instance, proprioception is subserved by Golgi tendon, joint receptors whereas the experience of pain is subserved by A-δ and C-fibers; these different sensory fibers in turn project to different regions of the brain. Third, and relatedly, subjects can suffer deficits in one or another of these sensory systems without suffering deficits in the other. For instance, subjects suffering from *mechanorceptive deafferentation* (Cole 1991; Cole 2016) lack both a sense of touch and proprioceptive awareness but retain the capacity to feel pain, while subjects suffering from *congenital anesthesia* (Wall and Jones 1991, Ch 4) lack the ability to feel pain but retain a sense of touch and proprioception. Hence, it appears that the elements of bodily awareness are dissociable from one another and so are, to that extent, distinct.

The fact that the components of bodily awareness are phenomenologically, physiologically, and functionally distinct poses an immediate and serious question: *what, if anything, unifies these disparate phenomena into a single form of awareness?* I call this the *Unity Puzzle.* Since the primary contention of my thesis is that there is such a form of awareness, my first task is to address the Unity Puzzle. In this section, I articulate and address two strands of the Unity Puzzle: the *Individuation Challenge*, or the question of how bodily awareness might be individuated from other forms of awareness, and *Multimodality Challenge*, or the fact that bodily awareness is pervaded by influence from other forms of awareness such as vision and touch. I argue that both challenges can be resolved by appeal to the idea that bodily awareness is a distinctive *form of awareness*, which I mean a distinct way of experiencing some aspect of the physical world.

2.3.1 Individuating the Senses

The Unity Puzzle is closely related to the more general question of how to individuate the senses. Since at least Aristotle we have worked with the intuitive idea that there are five senses: taste, touch, smell, sight, and hearing. For Aristotle, the individuation of the senses was a matter of which qualities one was aware of them (Aristotle 2011). Each sense, except for touch, has a special sensible quality that characterizes it: color, sound, taste, and smell, in the case of vision, audition, taste, and smell. With touch, there are several such qualities: "hot cold, dry moist, hard soft, &c" (55). This fact leads Aristotle to wonder "if touch is not a single sense but a group of senses" (55). It is precisely this worry, regarding bodily awareness, that occupies us presently.

Contemporary philosophical work on the topic of individuating the senses was inaugurated by H.P. Grice's article 'Some Remarks About the Senses' (Grice 2011). In that piece Grice distinguishes four criteria that one might use to individuate sensory modalities. Quoting Grice:

1. It might be suggested that the senses are to be distinguished by the differing features that we become aware of by means of them: that is to say, seeing might be characterized as perceiving (or seeming to perceive) things as having certain colours, shapes, and sizes; hearing as perceiving things (or better, in this case, events) as having certain degrees of loudness, certain determinates of pitch, certain tone-qualities; and so on for the other senses.

2. It might be suggested that two senses for example seeing and smelling, are to be distinguished by the special introspectible character of the experiences of seeing and smelling; that is, disregarding the differences between the characteristics we learn about by sight and smell, we are entitled to say that seeing is itself different in character from smelling.

3. Our attention might be drawn to the differing general features of the external physical conditions on which the various modes of perceiving depend, to differences in the 'stimuli' connected with different senses: the sense of touch is activated by contact, sight by light rays, hearing by sound waves, and so on.

4. References might be made to the internal mechanisms associated with the various senses—the character of the sense-organs, and their mode of connection with the brain. (85)

The first of these criteria is Aristotle's. The second is closely related, having to do with the phenomenological character of an experience, or what it is like for the subject to undergo it (Nagel 1974). The third criterion appeals to the notion of a stimulus, or the physical feature to which the sense is attuned, while the fourth appeals to the nature of the sensory apparatus so attuned. The gist of Grice's intricate discussion is that the second criterion cannot be eliminated from an account of how to individuate the senses, but my interest in Grice is less in his own view and more in the list of options he presents us with.

One way of putting the Unity Puzzle is that it appears that bodily awareness is not a sensory modality according to *any* of Grice's proposed criteria. With regard to the first, Aristotle's worry about touch rears its head: bodily awareness appears to have no single proper sensible; rather, the different aspects of bodily awareness involve awareness of very different sensible qualities. With regard to the second, bodily awareness as such seems to have no identifiable qualitative character. Of course, there is qualitative character associated with proprioception, kinesthesia, bodily sensations, and the sense of balance, but that provides reason for thinking *they* are senses, not that bodily awareness is. With regard to the third, bodily awareness is sensitive to many different physical stimuli. And with regard to the fourth, bodily awareness is subserved by many different sensory receptors that project to many different brain regions. Hence, whichever of Grice's criteria we look to, we seem to reach the verdict that bodily awareness *isn't* a sense. One aspect of the Unity Puzzle, then, arises from the challenges posed by the task of individuating the senses. Call this the *Individuation Challenge.*

More recent discussions of how to individuate the senses do nothing to help us resolve the Individuation Challenge. For instance, on Brian Keeley's account, a sensory modality is a (a) biological system comprising a sense organ and a neurobiological system which is (b) sensitive to a particular physical stimulus which (c) results in behavior on the part of the creature and (d) in doing so fulfills an evolutionary or development function (2002). However, as with Grice's criteria, Keeley's would appear to apply to the different components of bodily awareness rather than to bodily awareness itself. Similarly, on Fiona Macpherson's view (2011), criteria such as Grice's should be conceived of as dimensions along which candidate senses can be ordered as more or less similar, so that the the task of individuating of senses in a discrete manner is a replaced with the task of determining how close or far apart different candidate senses are in a hyperspace whose axes

are these various dimensions. While Macpherson's account is quite liberal as far as the individuation conditions of senses, it still does not help us address the Unity Puzzle. For again, it would seem that it is various components of bodily location which can be located in this similarity hyperspace, not bodily awareness itself.

To summarize, it appears that even a brief foray into the literature on individuating the senses puts the Unity Puzzle into stark relief. For my claim that proprioception, kinesthesia, the bodily sensations, and the vestibular sense are aspects of bodily awareness while, say, visions is not relies upon there being some principled way of individuating forms of awareness. If there is no principled basis on which to regard bodily awareness as different in kind from vision, then my thesis will rely, at best, on rough 'intuitions' we have (or are supposed to have) about what makes one sensory mode different from another. The issue will be all the more fraught since unlike the Aristotelian five senses, bodily awareness is not a folk concept about which we might be said to have intuitive judgments.

Fortunately, the threat posed by the Individuation Challenge can be avoided by carefully distinguishing my project from that of individuating the senses. When I claim that bodily awareness is a form of awareness, I am not claiming that it is a sense or sensory system as those terms are used by theorists in this debate. As I am using the term 'form of awareness', it is, by stipulation, a conscious phenomenon, since my interest is in bodily awareness, our conscious awareness of our body 'from the inside.' By contrast, senses or sensory systems are not necessarily conscious, as Keele correctly recognizes (23-25). For instance, while the matter remains very controversial, there is some evidence that human beings have an operative pheromone sense (Meredith 2001). But it is certainly not phenomenologically obvious that humans have an operative pheromone sense. If it were, we wouldn't need to settle the question scientifically. This example suffices to show that what I am calling a form of awareness differs in an essential respect from senses or sensory systems: forms of awareness are, by my stipulation, aspects of conscious awareness, whereas the operation of senses or sensory systems is not not necessarily conscious; there is at least the possibility of unconscious senses. So the notion of a form of awareness differs from that a sense, since the former is necessarily conscious while the latter is not.

By distinguishing forms of awareness from senses and claiming that bodily awareness is a form of awareness, I am able to sidestep many of the difficulties raised by the question of sensory individuation. However, characterizing

bodily awareness as a form of awareness raises a corollary challenge: *on the basis of which criteria do we individuate forms of awareness?* In short, we have so far merely replaced one problem, namely that of individuating the senses, with another equally hard one, namely that of individuating forms of awareness. Fortunately, however, I think we can make progress on the question of individuating forms of awareness. As I will go on to argue, forms of awareness are individuated in terms of their *structural features*, or systematic regularities in the spatial appearances of the objects and qualities that show up in that form of awareness. For instance, what makes vision a distinct form of awareness from bodily awareness is that vision has an *egocentric* structure, originating at a point near the eyes, whereas bodily awareness has a very different spatial organization, one which lacks any distinctive egocentric perspective.[6] By focusing on differences in the spatial structure of different forms of awareness we are able to find a principled basis on which to distinguish them. In a later section I will spell out the idea that bodily awareness is awareness 'from the inside' in greater detail, thereby addressing the Spatiality Puzzle.

2.3.2 Multimodality

A distinct, though related, threat to the unity of bodily awareness arises from the phenomenon of multimodality. As philosophers began examining the nature of the senses and the question of their individuation more deeply, focus inevitably turned to empirical results that seem to demonstrate that the different senses are not so different after all. Rather than constituting informationally encapsulated modules (Fodor 1983), the various sensory modalities interact with one another in pervasive ways, with profound effects. For instance, in the McGurk effect what a subject sees influences what she hears. As McGurk and MacDonald describe it:

> [O]n being shown a film of a young woman's talking head, in which repeated utterances of the syllable [ba] had been dubbed on to lip movements for [ga], normal adults reported hearing [da] [....] When these subjects listened to the soundtrack from the film, without visual input, or when they watched untreated film,

[6] This is obviously to simplify the matter a great deal. I expand on this rough characterization in §2.4.

> they reported the syllables accurately as repetitions of [ba] or [ga]. (McGurk and John MacDonald 1976, 746)

Results such as this one raise difficulties for individuating the senses, for they appear to undermine a presupposition of that project, namely that the senses are distinct in the first place. If 'visual' information contributes to 'auditory' experience, then how are we find a principled way of demarcating vision and audition? One can raise a similar challenge in the case of bodily awareness. Visual information, for instance, appears to play an important role in our awareness of our body, seemingly undermining the distinction I am drawing between bodily awareness and vision. Another aspect of the Unity Puzzle, then, arises from the multimodality of sense perception, and in particular the multimodality of bodily awareness. Call this dimension of the Unity Puzzle the *Multimodality Challenge.*

Applied to the case of bodily awareness, the Multimodality Challenge is particularly acute. For bodily awareness appears to be thoroughly multimodal, both in the sense that the different aspects of bodily awareness are integrated together in an intimate way, and in that bodily awareness pervasively draws on other sources of information, especially vision (Vignemont 2018; Briscoe 2019). This fact is brought out, for instance, in the infamous Rubber Hand Illusion (Botvinick and Cohen 1998; Ehrsson et al. 2007), where visual information influences one's awareness of one's body. In that illusion, a rubber hand is placed on a table while one's actual hand is occluded. Both hands are then synchronously stroked with brushes. After a few minutes of synchronous stroking, many subjects report the vivid feeling that the brushing sensation is felt on the rubber hand rather than on their actual hand, and such subjects display difficulty in locating their actual hand. This illusion is explicable by invoking a top-down visual influence on tactile and proprioceptive awareness (Costantini and Haggard 2007).

Sensory illusions such as the Rubber Hand Illusion might leave one with the impression that visual information distorts our bodily awareness, but in fact visual input has an overall ameliorative effect. By themselves, proprioception and kinesthesia provide us with only very limited information about our bodies. As Frédérique de Vignemont notes, "the fact that we have five fingers, that they are cylinder-shaped, that they are of a certain length, and that they are next to each other in a certain order cannot be easily derived from signals about muscle stretch, tendon tension and joint angle" (Vignemont 2018, 84). In order to provide us with an accurate sense

of our bodies, online proprioceptive and kinesthetic feedback must be integrated with stored information about one's body (a 'long-term body image' as Brian O'Shaughnessy (1980) calls it) as well as current visual feedback. The influence of vision on ordinary bodily awareness and bodily movement is profound. For instance, Beers, Anne C. Sittig, and Jan J. Denier van der Gon (1999) cite evidence that suggests that when there is conflicting visual and proprioceptive information concerning one's hand, the hand "is localized closer to the visually perceived position than to the position perceived proprioceptively" (1355). Hence, in certain respects vision could even be said to be a more significant contributor to bodily awareness than proprioception, kinesthesia, etc.

On the basis of such results, Frédérique de Vignemont (Vignemont 2018) and others have argued that bodily awareness is constitutively multimodal.[7] For de Vignemont this is a matter of "multisensory binding [being] a constitutive component of the etiology of bodily experiences" (997).[8] By *multisensory binding* de Vignemont means the integration of multiple experienced properties in a single experienced object. For instance, seeing both the shape and color of an apple is an instance of multisensory binding. As she characterizes it, multisensory binding must satisfy two conditions: the *parsing condition*, which says that "information resulting from distinct sensory sub-processes, such as colour-processing and shape processing must be singled out as being about the same object or event" (996), and the *integration condition*, which says that "the information that has been selected must be integrated into a unified content" (996). In other words, for multisensory binding to occur a sensory system must resolve the question of whether two bits of information derive from the same object, and it must integrate those bits of information into a single conscious percept. So for bodily awareness to be multimodal as de Vignemont is using the term it must be the case that, constitutively, such multimodal binding is part of the 'etiology' of experiences of bodily awareness. In particular, she argues that visual input satisfies this condition, so that bodily awareness is multimodal in the sense of also incorporating visual information about the body.

[7]For instance, Hong Yu Wong (2017b) has appealed to cross modal influence in order to solve a serious puzzle regarding our capacity for bodily movement: our purely proprioceptive body representions are significantly distorted, making it puzzling how we could competently perform bodily actions using them. Wong resolves this puzzle by appealing to a multimodal body schema which draws upon other sources of bodily information.

[8]Though see Mandrigin (2018) for some criticism of de Vignemont's argument.

Crucially, de Vignemont distinguishes between a *strong* and *weak* version of the multimodality thesis. The strong version reads the constitutive claim in such a way that it would be impossible for a subject who lacks visual experience to have bodily awareness. As she notes, the strong version of the multimodality thesis is obviously false: blind subjects retain proprioceptive, kinesthetic, sensational, and vestibular awareness of their bodies (2018, 997). Instead, she goes in for a weaker constitutive claim which says only the experiences of bodily awareness of blind subjects differ from the experiences of bodily awareness of sighted subjects. On this view, visual experience is a constitutive element of what we might call *ordinary bodily awareness*, in the sense that it is necessary for it. At the very least, subjects who lack visual awareness of their bodies will have different experiences of bodily awareness; they will lack ordinary bodily awareness.

A thorny issue for de Vignemont, and indeed for any theorist arguing for a constitutive claim of this sort, is disentangling it from a related but distinct *causal* claim. In contrast to the weak multimodality thesis, consider the *causal influence thesis.* According to the causal influence thesis, bodily awareness and visual experience are distinct senses according to whatever criterion of sensory individuation is correct, and the one merely exerts some causal influence on the other.[9] Causal influence from one sensory modality to another ought, at least in principle, to be acceptable to any theorist, as it is impossible to rule our *a priori* a contingent, causal connection between one sensory system and another.

How does de Vignemont go about distinguishing between a weakly constitutive and a merely causal relationship between bodily awareness and visual awareness? She appeals to the *teleological function* of bodily awareness. Roughly, the idea is that the only way for a subject to receive accurate information about the state of one's body is through the use of vision, since bodily awareness is in many ways inaccurate and informationally impover-

[9]We are supposing for the sake of argument that there is some criterion for individuating the senses. In fact, this is a presupposition of seeking to establish the mulitmodality of a given kind of experience. For if there are no such things as modalities in the first place—if there is no principled way of distinguishing vision from audition, etc.—then it will be impossible for there to be any connection, let alone a constitutive one, between those modalities. In its most radical form, we could call such a view *sensory holism*, the view that there is *no* principled way of distinguishing one sensory modality from another. Sensory holism is 'multimodality' taken to the extreme, since it abolishes any grounds for distinguishing one sense from another. However, even putting aside its implausibility, sensory holism is a far bolder view than what de Vignemont and others are going for.

ished. On this view, visual input is necessary for the proper functioning of bodily awareness and so is, in that sense, a constitutive element of it. This leads de Vignemont to claim that "certain types of causal relations and dependencies can amount to constitutive relations when they have been selected to contribute to the fulfillment of a given function" (999). In other words, merely causal relationships count as constitutive relationships for de Vignemont when they aid in the performance of a goal. A flat-footed objection to this idea is that de Vignemont does not really end up denying that the influence of vision on bodily awareness is merely causal. In effect, what she does is *define* a certain kind of causal relation as a constitutive relation. Without getting too deep into what are purely terminological issues, this is not ultimately a means of denying the causal influence thesis.[10]

A more substantive objection concerns whether, in the case of vision and bodily awareness, there really is multisensory binding in the sense required for establishing the multimodality thesis. In particular, it seems that visual properties such as color are not bound together with proprioceptive properties in the same way that they are bound together with other visual properties. When you are both looking at and feeling (via bodily awareness) your hand, your visual and bodily awareness are integrated together in some way, so as to give you a sense of a single object with both visual and proprioceptive features. Now, suppose that you close your eyes while you are still proprioceptively attending to your hand. You will no longer have visual awareness of the hand, but it will not seem to you as if the hand itself has changed in any way. Imagine instead that you could turn your color experience on and off at will, so that your hand went from color to monochrome and back again. In this case, because the color and the shape of the hand are bound together in vision, the sensory difference in question would be perceived as a difference in the perceived object: *it*, the hand, would appear to change color (though of course you know in this case that it isn't actually changing color). This simple example illustrates that there is a difference in the way properties are bound together across forms of awareness and within one form of awareness. When properties apparent in a given form of awareness go

[10]I should acknowledge that the difficulty here is in no way peculiar to de Vignemont's account. It is genuinely hard to see, at the limit, what could settle the question of which of these two hypotheses is correct. One would need a detailed overarching theory of how sensory systems operate and co-operate in order to motivate drawing such a distinction.

missing, we experience an alteration in the perceived object.[11] But when an entire sensory modality which is dialed in to an object goes offline, we do not experience any alteration in the perceived object. This difference, I propose, has its source in the way properties are bound together between different forms of awareness vs. within a single form of awareness.

Let me address two potential misunderstandings of what I am saying here. First, I am *not* here suggesting that one is 'really' aware of two objects, a 'purely visual' hand and a 'purely proprioceptive' hand. As I am thinking of the situation, there is only ever one object that one is aware of: one's hand, which is a physical object in the environment. What is going on, however, is that one is aware of it in two different *ways.* In other words, the separability of visual awareness of one's hand from proprioceptive awareness of one's hand demonstrates a fundamental demarcation in the ways we have of becoming aware of of objects, in particular our body parts. Second, I am not *not* denying that the visual and proprioceptive properties that one attributes to the hand in one's experience are bound together in experience in *some* sense. Rather, I am suggesting that they are bound together in a different way than one's visual properties alone are, and that this difference is central to the task of individuating forms of awareness.

One way to put this is to invoke a distinction between *intramodal* and *intermodal* binding (O'Callaghan 2014). As Casey O'Callaghan characterizes it, intramodal binding occurs just in case features within a given sense modality, for instance color and shape in the case of vision, are bound together, or presented in conscious awareness as co-instantiated in a single object. Intermodal binding occurs just in case features that belong to different sense modalities, for instance weight and color, are presented in conscious awareness as co-instantiated in a single object. On this model, visual properties are bound together with other visual properties, namely intramodally, in a way that visual properties and proprioceptive properties are not. This is what explains the difference between losing color vision, which involves an apparent alteration in the object that one is looking at, and closing one's eyes, which does not. Because vision and bodily awareness are distinct forms of awareness, they are able, at least in principle, to operate independently

[11]Note that the claim here is not that all changes in appearance of an object in a given modality seems like an apparent change in the object. Cases such as blur suffice to show that this is false. Rather, the claim is that if one's awareness of a whole type of property—color, say—drops out, the things that is aware of that seem to bear that property will then appear to change, as in the case involving loss of color vision.

of one another. At the same time, one's visual and proprioceptive awareness are, in a different sense, bound together to provide the subject with a unified and coherent awareness of one's hand as the simultaneous bearer of both visual and proprioceptive properties. This is intermodal binding, or the integration of features across two different forms of awareness.

The distinction between intra- and intermodal binding helps us to clarify the results discussed by de Vignemont and others. These results really establish two things: (a) that intermodal binding occurs between vision and bodily awareness (b) that information from vision influences bodily awareness. But we do not find reason to collapse vision and proprioception into a single form of awareness. Indeed, the fact that vision and bodily awareness both involve intermodal binding and that each can operate (with some deficits) in the absence of the other suffices to show that they are distinct forms of awareness. Hence, the upshot of these results for the Unity Puzzle is that despite the degree of interaction between vision and bodily awareness, we are here still dealing with two different forms of awareness.

What we are still left with is the question of how to individuate forms of awareness in a principled manner. Here the notion of intramodal binding is of little help. For in appealing to the notion of intramodal binding we are already helping ourselves to the idea of a form of awareness. There would, perhaps, be no serious difficulty here if each form of awareness were associated with a disjoint set of sensory qualities, but this proposal is shipwrecked by the presence of common sensibles such as spatial properties. For instance, both vision and proprioception enable one to perceive the spatial configuration of one's hand. Hence, we cannot differentiate modalities solely by appeal to the properties that one is aware of them, since we can be aware of some of the same properties via multiple modalities. So while we must acknowledge that features vision and bodily awareness both involve intramodal binding, merely invoking this difference merely defers the fundamental question: *in virtue of what are vision and bodily awareness distinct forms of awareness?*

In the following section, I take up this question. I argue that forms of awareness can be differentiated from one another in virtue of their *structural features*, or systematic invariances in the way things can appear in that form of awareness. In the case of visual awareness, objects are presented egocentrically, relative to a point of view originating near the subject's eyes, and at some distance from the perceiver. By contrast, in bodily awareness objects and qualities are presented in parts of the subject's body, though one is not aware of the body from a separate vantage point, as one is in vision. Fully

spelling out this difference requires getting into the details of how to characterize the structure of different forms of awareness, but with such an account in hand we are able to finally explain in a principled manner why bodily awareness is a single form of awareness comprising proprioception, kinesthesia, bodily sensations, and the vestibular sense, thereby resolving the Unity Puzzle.

2.4 Forms of Awareness and The Spatiality Puzzle

I have been arguing that, initial appearances to the contrary, issues regarding how to individuate the senses and how to understand their relationship are largely orthogonal the Unity Puzzle. In the case of individuating the senses, the problem is that forms of awareness such as bodily awareness and visual awareness are not the same thing as senses. It is possible both that bodily awareness and vision comprise several distinct senses (proprioception, kinesthesia, bodily sensations, the vestibular senses in the case of bodily awareness; a color sense, a motion sense, etc. in the case of vision) and that there are unconscious senses (for instance a pheromone sense in humans). For these reasons, the notion of a sense and that of a form of awareness should be kept distinct. This also means that the inability to find a principled means of demarcating the senses does not necessarily undermine my claim that bodily awareness and vision are distinct forms of awareness. In the case of multimodal effects, rather than erasing any distinction between bodily awareness and vision, these phenomena in fact presuppose that bodily awareness and vision are different forms of awareness. Only if that were so could one properly be said to influence the other. So without disputing any of the results which demonstrate the influence of vision on bodily awareness, I deny that they undermine the unity of bodily awareness by erasing any principled distinction between it and other sensory systems such as vision.

To this point, however, I have said little about what a form of awareness is, or how we are to distinguish one form of awareness for another. This is a problem, since many of the issues that arise for individuating sensory systems also seem to frustrate attempts to individuate forms of awareness. For instance, one might attempt to individuate forms of awareness in terms of the properties that one is aware of them in them: colors, shapes, etc. in vision, bodily sensations and body parts in bodily awareness, etc. But there are

well-known problems with such proposals, most obviously that some properties, so-called 'common sensibles' such as shape, are available to more than one form of awareness. Since the disposition of one's hand is apprehensible by both vision and bodily awareness, these forms of awareness cannot be characterized in terms of disjoint sets of sensible properties. Hence, if we are to make any real progress on the Unity Puzzle, we need a principled basis on which to distinguish bodily awareness from vision and other forms of awareness.

In this section, I will argue that forms of awareness such as vision and bodily awareness are distinct in virtue of involving different *structural features.* In visual experience, for instance, the objects and qualities that one is (seemingly) aware of are presented from a certain perspective, namely an egocentric one centered at or near the subject's eyes. This fact about visual awareness explains certain facts about the way things appear in vision, for instance that a closer object occludes a more distant one, or that a closer object will take up more of the visual field than a more distant one of the same size. By contrast, bodily awareness has a very different kind of structure, and correspondingly different laws of appearance.[12] For instance, the notion of an origin point which constitutes one's perspective has no applicability in the case of bodily awareness. For this reason, there is no correlate of occlusion in bodily awareness, nor does the notion of distance from the subject seem to have any purchase. That is, a pain in one's shoulder does not prevent one from feeling a pain further down in one's arm, nor does a pain one's shoulder feel somehow closer to one than a pain in one's hand.[13] These are instances of what I am calling structural features of a form of awareness. My chief task will be explain the notion of a structural feature of a form of awareness and illustrate how it allows us to individuate forms of awareness in a principled manner.

My route into this issue will involve drawing a contrast between the structure of visual awareness and the structure of bodily awareness. Perhaps the

[12]I take the phrase 'laws of appearance' from Adam Pautz (n.d.). Pautz uses the term to pick certain apparently necessary truths about the ways things can appear, e.g. that nothing can appear both entirely red and green over the entirety of its surface at one time.

[13]For some research on people's intuitive judgments about their location in their bodies see Alsmith and Longo (2014). The researchers find that self-location judgments tend to focus on either the head or the torso, and that there is no single privileged point at which subjects locate themselves: "Our results suggest that no single body part is judged as the unique seat of the self" (73).

most fundamental structural difference concerns the role that the notion of *perspective* plays in understanding each form of awareness. One can model visual awareness using a point (representing the subject's point of view or perspective) and a set of rays (representing 'lines of sight.') This way of modeling visual awareness underpins the development of systematic optical theory beginning with Euclid's *Optics* (1945) and culminates in the system of linear perspective. But while the notion of perspective has clear application in understanding visual awareness, it seems inapplicable in understanding bodily awareness. For while bodily awareness is often characterized as awareness of one's body 'from the inside', this form of words, while evocative, is deeply misleading: it suggests that in bodily awareness one is aware of one's body from a point somewhere inside of it. But of course this is not at all how we experience our bodies in bodily awareness. There is an episode of the American children's television series *The Magic School Bus* where the titular school bus and its occupants get shrunk down to a tiny size so that they can explore the inside of a human body (Jacobs 1994). This is, literally, awareness of a body from the inside and, to state the obvious, this type of awareness is nothing like bodily awareness. But while it is relatively easy to see the inadequacy of this characterization of the structure of the bodily field, it is much harder to say what the structure of the bodily field is.

I call the problem of understanding the structural differences between bodily awareness and other forms of conscious awareness the *Spatiality Puzzle*, since bodily awareness seems to have a very different spatial structure than visual awareness. In order to make progress on the Spatiality Puzzle, I begin by describing the spatial structure of visual awareness in more depth. I then use this analysis to draw out a contrast with the spatial structure of bodily awareness, which I leverage to develop a positive account of its structure, drawing on work by phenomenologists such as Edmund Husserl and contemporary analytic philosophers such as M.G.F. Martin and José Luis Bermúdez.

2.4.1 The Structure of Visual Awareness

The Spatiality Puzzle is brought into relief by comparing the structure of bodily awareness with that of visual awareness. Philosophers and psychologists from the early modern period on have been interested in the structure of visual awareness and have often pursued this question using the notion

of a *visual field.* Infamously, many early modern philosophers thought that the visual was a two-dimensional array of colored points or pixels. Here, for instance, is David Hume:

> But my senses convey to me only the impressions of colour'd points, dispos'd in a certain manner. If the eye is sensible of any thing farther, I desire it may be pointed out to me. But if it be impossible to shew any thing farther, we may conclude with certainty, that the idea of extension is nothing but a copy of these colour'd points, and of the manner of their appearance. (1978, 34 (T 1.2.3))

One find similar commitments in other empiricist philosophers such as George Berkeley (1709, 1) and John Locke (1975, 144 (2.9.8)).

Systematic scientific study of the structure of perception, including the spatial structure of the visual awareness, began in earnest with the pioneering work of researchers such as Ernst Weber, Gustav Fechner, and Hermann von Helmholtz. These researchers helped to found the field of *psychophysics*, which engages in the systematic study of the relationship between physical stimuli and the perceptual responses that they generate.[14] One topic pursued by Helmholtz and others concerns the geometric structure of the so-called visual field. Inspired by the discovery of non-Euclidean geometries, Helmholtz and others pursued the question of whether the visual field has a Euclidean or non-Euclidean geometry (Masrour 2015, 1820). What is important for my purposes are not the results of these studies, but some of the fundamental questions raised by them. In particular, what is it that researchers are studying when they are studying the geometry of the visual field? To first appearances, this research seems to presuppose the existence of a certain type of entity, the visual field, and the ascription certain properties to it, namely geometric ones. But what is the visual field, and what are we saying when we say that it has a certain (geometric) structure?

Austen Clark, in 'Three Varieties of Visual Field' (1996), usefully distinguishes between three different notions that researchers may have in mind when speaking about the visual field. The "ur-concept" of the visual field is that of the "sum of things seen" (479). The question is what this amounts to. On the first notion, that of a *field of view*, "the field of view at time t [is]

[14] A standard introduction to the subject is Gescheider (1997). For some philosophical discussion of the psychophysics of sensory qualities see Clark (1993).

the mereological sum—the scattered totality—of physical phenomena seen at time *t*'] (479). So on this use of the term 'visual field', the visual field is a gerrymandered set of physical objects and events, "a large three-dimensional physical phenomenon" (479). It just whatever what one is, in fact, seeing. So understood, there is nothing mysterious about the visual field: it is simply a portion of the physical world. But this notion cannot be what philosophers and psychophysicists are after when they investigate the geometry of the visual field, for the geometry of *this* field is just the geometry of space itself, which is a matter for physics, not psychophysics, to investigate. For this reason, when these theorists speak of a visual field and investigate its properties, they must mean something else.

On the second use Clark identifies the notion of a visual field is that of a subjective *array of impressions*. On this use of the term, rather than being a part of the physical realm, the visual field stands in contrast with it, since visual impressions are taken to be mental phenomena. This is the idea that Hume is getting it: one has visual impressions—*colour'd points*—which are spatially arrayed—*dispos'd in a certain manner*. These visual impressions are distinct from any physical object, property, or event, and exist somehow in one's mind. Because the visual field, on this understanding, is distinct from anything in the physical world, it can be the proper object of phenomenological and psychophysical study. Whether implicitly or explicitly, this second use is what philosophers and psychologists typically have in mind when they speak of the visual field and investigate its properties. But it is hard to see how a non-physical, purely mental entity might properly be said to instantiate spatial properties. Moreover, views of this sort raise well-known metaphysical and epistemological worries: what are these non-physical impressions, and how could our acquaintance with them put us in cognitive contact with the physical world beyond? For these reasons, there is good reason to try and understand visual experience without so reifying the notion of a visual field.

Finally, on the third use, the *sum of things as represented visually*, the visual field is "the world as it is represented visually: what the world would have to be [like] if it were just as it visually appears to be" (488). On this use of the term, the visual field is an intentional object, something cited in a characterization of the intentional content of a visual experience. If you seem to see a red apple before you on the table, then the red apple is the intentional object of your visual experience, regardless of whether there is in fact a red apple on the table before you. In other words, to say that something is an

intentional object of visual awareness is just to say that it is represented by the subject in visual awareness. The visual field, then, is just the sum total of such represented objects. While this way of understanding the notion of a visual field has the benefit of not introducing any strange new entities into our ontology, it does little to clarify questions about what it would mean to ascribe, say, a certain geometry to the visual field. The most this could mean is that one sees objects as standing in certain geometric relations, but then it would reduce confusion to simply talk about perceived geometric relations rather than to refer to the geometry of a non-entity, the (purely intentional) visual field.

Because of the difficulties in spelling out the notion of a visual field in an illuminating way, I propose to eschew it. All that is legitimate in the notion of a visual field can be captured by saying that in vision there are systematic invariances in or laws governing the way things appear, and that you can understand these invariances or laws by modeling vision in a certain way. These invariances or laws are what I refer to as *structural features* of a form of awareness. Hence, instead of investigating the nature of the visual field, my task is that of discovering some of the structural features of visual awareness. The goal here is to use these structural features to provide us with criteria for distinguishing forms of awareness: different structural features, different form of awareness. In the remainder of this section I develop this idea by identifying some structural features of visual awareness and showing how they can aid us in individuating forms of awareness. Since the focus of this thesis is not visual awareness, my discussion will be illustrative. The point here is to draw out the notion of a structural feature of visual awareness rather than defend any very specific claims about the nature of visual awareness.

To say that visual awareness has a certain structure is to say that certain aspects of the phenomenology of visual experience are explicable if one models vision in a particular way. For instance, one salient feature of visual experience is occlusion: if an (opaque) object is between the subject and another object, some or all of the farther object is occluded from sight by the closer object.[15] If one models a subject's visual awareness in terms of a set of rays (representing *lines of sight*) originating at a point in between the eyes (the *point of view* or the subject's *visual perspective*) and terminating when coming into contact with an object, this feature of vision immediately falls out as a consequence: if what is seen is what is what is contacted by

[15]The notion of an opaque object need not be viciously circular…

such a ray, then only the closest object in any given direction will be seen. If one had chosen to model visual awareness in some other way, there is no guarantee that this feature of vision would have been accurately modeled. The fact that visual occlusion falls out of this particular way of modeling the structural of visual awareness substantiates the claim that visual awareness has the structure of this model. This feature of visual awareness counts as a structural feature for two reasons. First, it is perfectly general: every visual experience of an opaque object exhibits occlusion.[16] Second, it concerns the spatial relations between objects of awareness: objects located farther from the subject on a given line of sight are occluded by from sight by closer ones.

Another structural feature of visual awareness is that there is a salient phenomenological similarity between large distant objects of a given shape and small near objects of that same shape. This fact is often put, misleadingly, as the claim that objects appear to diminish in size as they get more distant. But in the plainest sense of this expression, it is simply not true that objects appear to get smaller as they get farther away. That said, there is some obvious shared appearance between a large distant circular object such as the moon and a small near circular object such as a dime that one holds in one's hand. Philosophers have discussed this phenomenon under a number of different guises: 'apparent shape', 'perspectival properties' (Noë 2006, Ch 3), 'situation dependent properties' (Schellenberg 2008), to list just a few. I shall simply label it *size/distance phenomenal similarity* and I will sidestep most of the philosophical controversies raised by this phenomenon, as they are irrelevant to the point I am making.

Like occlusion, size/distance phenomenal similarity is also explicable if one models vision in the standard way, in terms of a point (taken to represent the point of view) and set of rays originating from it (taken to represent lines of sight). Size/distance phenomenal similarity is explicable using this model since a small near object and a large distant object of the same shape will subtend the same visual angle, that is, be contacted by the same number of visual rays (Palmer 1999, 20). For this reason, they have a salient feature in common, since in virtue of this fact, both objects will have a similar effect

[16]There are, it should be admitted, some complicating cases, for instance when looking an object near one's eyes one can 'see through it' since each eye is able to perceive a different area behind the object. But these complications don't affect the central points being made here.

on the subject's retina, and hence their visual system.[17] Like occlusion, size/distance phenomenal similarity is also a structural feature. It is also a general law of visual awareness, and it also concerns the apparent spatial properties of perceived objects.

Occlusion and size/distance phenomenal similarity are instances of what I am calling structural features of visual awareness: systematic regularities concerning the spatial appearance of the things that one is aware of in vision. I have claimed that both features are explicable if one attributes to vision an *egocentric* structure consisting in a point which represents the subject's point of view or perspective on the visual scene and a set of rays which represent the subject's lines of sight, which delimit the objects that the subject is in a position to see. Generalizing, to attribute a certain structure to a form of awareness is to say that certain general facts about the way things in that form of awareness (in particular apparent spatial facts) are explicable if one models that form of awareness in a certain way, that is, ascribes certain structural characteristics to it. Why should this provide us with any insight into the nature of a given form of awareness? Well, forms of awareness are different ways that sensed objects and qualities can appear to one. But forms of awareness cannot be individuated purely in terms of the objects and qualities that one is aware of in them, for reasons we have already covered. Hence, some other feature of them must serve to distinguish them. What I am calling structural features emerge as the most salient phenomenological features of forms of awareness other than the objects and qualities that one is aware of them, and seem essential to their respective forms of awareness since they condition anything that one is aware of in them. For these reasons, structural features plausibly carve forms of awareness at their phenomenological joints.

To illustrate such differences consider audition. Auditory awareness, like visual awareness, has a spatial character (*contra* what P.F. Strawson suggests in Chapter 2 of *Individuals* (1959)) But the spatial character of audition is very different than that of visual awareness. We can put this point by saying that auditory awareness exhibits a distinct set of structural features. For instance, there is no clear analogue of occlusion in audition: it's not the case that a sound heard in one direction necessarily precludes hearing a more distant sound in that same direction, in the way that seeing an object in

[17]None of this to say that visual awareness is a simple function of what happens at the retina, merely that facts about what happens at the retina are a major determinant of visual experience, and that certain visual phenomena can be at least partly explained by facts at this stage of visual processing.

one direction precludes seeing a more distant object in that direction. Of course a sound in one direction may prevent hearing a more distant one, if for instance the nearer sound is also significantly louder. But while one might regard a louder sound drowning out a quieter one as *analogous* to occlusion in vision, it is not the same thing since it lacks the particular spatial properties of visual occlusion. Auditory awareness also arguably instantiates a version of size/distance phenomenal similarity, since a distant loud sound might resemble a near quiet one, but this similarity also rests on drawing an analogy between size and loudness. Auditory awareness also involves structural characteristics which have no analogue in vision. For instance, auditory awareness enables spatial awareness in 360 degrees: one can hear sounds as coming from any location around one, whereas in vision the area that one can see is limited to the region of space which is directing light into one's eyes. In this way, auditory awareness has a wider range of spatial sensitivity than vision. It is in virtue of these structural differences, I am claiming, that vision and audition are distinct forms of awareness.

Before going on, it is worth distinguishing forms of awareness from what cognitive scientists call 'reference frames' or 'frames of reference.'[18] Roughly put, a frame of reference is a "[way] of representing [...] a particular [spatial] region" (Campbell 1994, 5). In psychological research it is standard to draw a distinction between *allocentric* and *egocentric* reference frames (Campbell 1885, Ch. 1). As the terms are generally used, an egocentric frame of reference is specified by a point (or set of points) on the body in terms of which spatial relations are defined, while an allocentric frame of reference is specified by a point (or set of points) on some external object in terms of which spatial relations are defined (1885, 8). Appeal to egocentric reference frames is common in cognitive science. For instance Röder, Rösler, and Spence (2004) invoke distinct frames of reference in order to account for the difference in blind and sighted subjects' performance in tactile discrimination tasks when their arms are crossed (122-3). It has been found that crossing one's arms impairs tactile discrimination in sighted subjects (Yamamoto and Kitazawa 2001) but not in blind subjects (Röder, Rösler, and Spence 2004). So-defined, egocentric frames of reference have nothing necessary to do with conscious awareness. It is certainly possible that cognitive processes that employ such reference frames will somehow manifest in conscious experience, but this is not intrinsic to the notion. An egocentric frame of reference, on

[18]For discussion of the general issue see Brewer and Pears (1993).

this understanding, is simply any frame of reference centered on some part of the subject's body, and such a reference frame might be employed entirely subpersonally or subconsciously. By contrast, a form of awareness is necessarily conscious, since it is nothing other than a way that certain objects and qualities manifest to a subject. Hence, the notions of a frame of reference and of a form of awareness should be kept distinct.

2.4.2 The Structure of Bodily Awareness

We are now in a position to contrast bodily awareness with visual awareness and resolve both the Unity Puzzle, which concerns the motivation for grouping together proprioception/kinesthesia, bodily sensations, and the vestibular sense, and the Spatiality Puzzle, which concerns the distinctive spatial structure of bodily awareness. My claim is that both puzzles have a common solution, insofar as understanding what is distinctive about bodily awareness requires understanding its characteristic structural features. This will provide us with a principled reason for including proprioception/kinesthesia, bodily sensations, and the vestibular sense and excluding all other phenomena from bodily awareness since it is the only former that manifest in the manner characteristic of bodily awareness. That is, when one has proprioceptive/kinesthetic awareness of a body part, feels a bodily sensation, or feels one's balance, one is aware of these phenomena in a particular way, characterized by these structural features.

We typically model the structure of a form of awareness in terms of the notion of a *perspective.* This is what we did in the case of visual awareness, which employs an egocentric perspective: a subject's visual perspective can be modeled as a set of rays originating at or near the eyes. This fact about visual awareness, in turn, explains certain structural features of visual awareness, namely occlusion and size/distance phenomenal similarity. But with bodily awareness, in contrast to visual and auditory awareness, the whole notion of awareness from a perspective seems inapplicable. Shaun Gallagher puts it correctly when he calls bodily awareness "non-perspectival awareness of the body" (Gallagher 2003, 62.) In part, this is simply a consequence of what forms of awareness such as vision or audition are, since such forms of awareness necessarily relate perceived entities to the subject's body. This is what the phenomenologist Edmund Husserl is getting at when he claims that the body functions as a 'zero point' in perceptual awareness. Here is

Dan Zahavi, articulating Husserl's view:

> The body is characterized as being present in any perceptual experience as the zero point, as the indexical 'here' in relation to which the [perceived] object is oriented. It is the center around which and in relation to which (egocentric) space unfolds itself (Hua, 11/298, 4/159, 9/392) (Zahavi 2003, 98–99)[19]

Husserl's idea is that forms of perception such as vision implicitly locate the subject herself at their origin, and in this way invariably implicate the subject's body.

It would seem that bodily awareness itself cannot have this structure. Since what one is aware of in bodily awareness is simply one's own body, there is no implicit contrast between what one is aware of in it—the object of awareness–and one's own body—the location of the subject. Instead, in bodily awareness the sole object of bodily awareness simply is the subject's own body. For this reason, bodily awareness cannot have the sort of egocentric structure as forms of exteroceptive awareness, which always involve an implicit relation to some part of the subject's body. This is Husserl's point.[20] At most, one might be said to be aware of certain parts of one's own body relative to others: when one is aware of one's right hand, one also has some awareness of that hand being at the end of one's right arm, which is attached to one's torso etc. But missing from this model is any unique point-of-view, or place where the subject's bodily awareness seems to proceed from.

If bodily awareness presented the body from a certain perspective, say one on the head, then body parts and bodily sensations located in the extremities would feel more distant than than body parts and bodily sensations located in the torso. But it is simply not true that my foot feels, in bodily awareness, like it is farther away from me than my shoulders are. What goes for body parts goes for bodily sensations. A pain in my hand does not seem farther away from me than a pain in my shoulder. As José Luis Bermúdez puts it:

> In contrast with vision, audition, and other canonically exteroceptive modalities, there are certain spatial notions that do not

[19]Hua references are to the *Husserliana*, or the complete works of Edmund Husserl. The Hua citations are copied from Zahavi's text.

[20]See also Gallagher (2003): "the proprioceptive spatiality of the body is not framed by anything other than the body itself. In other words, proprioception is a non- perspectival awareness of the body" (62).

> seem to be applicable to somatic proprioception. For any two objects that are visually perceived, it makes obvious sense to ask both of the following questions: (a) Which of these two objects is farther away? (b) Do these objects lie in the same direction? [….] Neither of these questions, makes sense, however, with respect to proprioception. (Bermúdez 1998, 153)

The reason for this, as Bermudez notes, is that it makes little sense to identify any particular location as the place from which bodily awareness originates or proceeds, as one might with the eyes in vision or the ears in audition.[21]

What is puzzling about this situation is that while bodily awareness does not employ a privileged perspective or point of view, it does have a rich spatial character. While body parts and bodily sensations as they are presented in bodily awareness cannot be said to be more or less distant from the subject, they are experienced as standing in complex spatial relationships with one another. If you focus on your bodily movements as you pick up an object, you are aware of your arm moving relative to your torso, and one generally has an implicit awareness of the relative locations of one's body parts at a time. The same holds true for bodily sensations. For instance, subjects can discriminate the locations of sensations reliably and attribute them to determinate bodily regions (Torebjork, Vallbo, and Ochoa 1987). So while bodily awareness lacks some of the characteristic structural features of visual awareness, auditory awareness, etc., it also clearly has its own spatial framework.

The beginnings of an account of the distinctive spatial structure of bodily awareness are provided by M.G.F. Martin in his paper 'Bodily Awareness: A Sense of Ownership' (1995). There Martin relies on the notion of a boundary to articulate the structure of bodily awareness. When one is aware of one's body in bodily awareness, one is aware not only of the body itself, where one can experience various bodily sensations, but also of the body's boundaries. If you you stretch out your arms, for instance, you aware of the distance between them. As Martin puts it:

[21] What of the intuition that we are located in our heads? Admittedly there is something to idea idea that 'I' am located where my head is, although research indicates that these intuitions are far from determinate (Alsmith and Longo 2014). But even if there is something to the intuition that 'I' am located in my head, that does not entail that there is some point in my head from which all of my conscious awareness springs forth. When I touch a class with my hand, my awareness proceeds from my hand and this is not because I have an intuition that I am located in my hand, as opposed to anywhere else in my body.

> This awareness of their relative positions is an awareness of how they are displaced across a region of space beyond the space in which your body is located and in which you have neither kinesthetic nor sensational awareness. (271)

In other words, bodily awareness involves both awareness of one's body itself (in proprioception/kinesthesia, bodily sensations, and the vestibular sense), but also awareness of that body as a bounded region which exists in a larger space which one lacks such awareness of (271). On this proposal, the key structural feature of bodily awareness is this felt contrast between the body itself, where one can experience bodily sensations, and the external world, where one cannot.

Drawing on Martin's work, José Luis Bermúdez articulates two structural features that characterize bodily awareness. They are:

Boundedness: Bodily events are experienced within the experienced body (a circumscribed body-shaped volume whose boundaries define the limits of the self).

Connectedness: The spatial location of a bodily event is experienced relative to the disposition of the body as a whole. (Bermúdez 2018b, 211–4)

Boundedness corresponds to Martin's claim that bodily awareness involves an implicit awareness of one's boundaries and entails that one's body is the sole-object of bodily awareness: since one experiences one's body as a bounded whole, anything that one feels in bodily awareness will be experienced as part of this bounded whole, that is, as part of one's body (Martin 1995, 271). Connectedness articulates the idea that bodily awareness presents one's body in a unified way. It's not like one is aware of disparate body parts and sensations, without any sense of their spatial relationship or organization. Rather, whatever one is aware of in bodily awareness is related to one's body as a whole. These two structural characteristics contrast sharply with those of other forms of sensory awareness. As Bermúdez puts it:

> Since there are no analogues of [Boundedness and Connectedness] for exteroceptive perception in any sensory modality, there seems to be something distinctive about how the spatial location of bodily events is experienced. (2018a, 241)

Hence, these structural features of bodily awareness serve to distinguish bodily awareness from every other form of awareness.

Bermúdez also invokes two other structural features to account for peculiar distance relations involved in bodily awareness. While the notion of distance from the subject has no application in bodily awareness, felt body parts and bodily sensations do stand in distance relations to one another. The spatiality of the body is complex however, since it seems to involve two different types of location: location relative to the fixed configuration of the body and location relative to its current disposition. In the former sense of location, one's hand is at a constant location: it is always at the end of one's arm. In the latter sense of location, the location of one's hand changes over time as one's arm moves. Bermúdez terms these two types of location *A-Location* and *B-Location* respectively (Bermúdez 1998; Bermúdez 2018b):

A-Location: The location of a bodily event in a specific body-part relative to an abstract map of the body, without taking into account the current position of the body.

B-Location: The location of a bodily event in a specific body-part relative to the current position of relevant body-parts. (2018b, 211)

We can think of the A-Location of a given body part as given by its location in an abstract and invariant body model segmented into parts individuated according to the body's natural joints (e.g. the arm is individuated by the shoulder, the forearm by the elbow, etc.) We can then think of the B-Location as arising when one augments the A-Location with information about joint angles (223). The set of possible B-Locations will be determined by the set of all possible A-Locations augmented by the set of all compossible joint angles.

These two notions help to resolve certain puzzles about the spatiality of bodily awareness. For instance, it sounds odd to say that if you move your hand and there is a pain in your hand that your pain moves. Some have used considerations like this to draw substantive philosophical conclusions, e.g. that pains merely have an 'intentional' location (Noordhof 2001; Noordhof 2002; Tye 2002). But with Bermudez's distinction in hand we can see what is really going on here. When you move your hand, the pain's A-Location remains the same. So a plausible hypothesis is that attributions of bodily sensations to body parts are usually read as indicating their invariant A-Locaton. Hence, nothing of philosophical significance about the locations

of pain follows from the invalidity of inferences such as the following:

1. The pain is in my fingertip.

2. The fingertrip is in my mouth.

3. Therefore, the pain is in my mouth. (Block 1983, 517)

Plausibly, 'in' in (1) and (3) refer to A-Location, and so (2) simply has no bearing on them. As this example illustrates, Bermudez's locative principles help to clarify some of the issues surrounding the spatial character of bodily awareness.

Bermúdez's four structural features give us a way of understanding bodily awareness that is independent of our way of understanding visual awareness. In turn, they help to explain certain peculiar features of bodily awareness. However, an additional structural feature should be added to Bermudez's list, a principle I call *Sufficiency:*

Sufficiency: Necessarily, if one is aware of some object x or property instance F via bodily awareness, one experiences x or F as a part or feature of one's own body.

A salient feature of the body as it is experienced in bodily awareness is that it feels to be one's own body. This *feeling of bodily ownership* attaches to the body parts and bodily sensations that one is aware of in bodily awareness. I explore this notion in more detail in Chapter 3, but it pertains to our discussion here since Sufficiency is a general feature of bodily awareness, something which is present in any experience of that type.

Sufficiency accounts for what we might call our sense of *embodiment* or, as Frederique de Vignemont puts it, our feeling of *presence* in our bodies (Vignemont 2018, 44). Our body not seem to us like a mere object. It is, rather, the object in which we are embodied, and which constitutes our physical presence in the world. Whether or not we are strictly identical to them, we closely identify with our bodies and self-ascribe their physical characteristics. Our ordinary conception of ourselves is (at least in part) that of a physical being with a certain size and shape, capable of certain physical actions, with a certain appearance, and so on (Strawson 1959, Ch. 3). This is not an accidental or contingent feature of our self-conception, but rather one grounded in our bodily awareness. It's not like we could have the very

sort of bodily experiences we in fact have and yet have no settled opinion on whether the body we are aware of in this way is our own. Bodily awareness itself seems to simply settle the question. This felt sense of identification is what I am calling embodiment and what I take Sufficiency to account for.

Structural principles that pertain purely to the spatial character of bodily awareness like those identified by Martin and Bermúdez do not obviously explain our sense of embodiment. This is because there is no apparent reason why awareness of a body-shaped object that conforms to these structural principles should necessarily be of, or be felt as being of, one's own body.[22] What is needed here is a substantive account of how and why bodily awareness has a first-personal character, an account, that is, of why Sufficiency is true and what its truth consists in. In Chapter 3 I provide just such an account. On the view I develop, the truth of Sufficiency is explained by the functional integration of bodily awareness with first-personal capacities such as self-ascription and agency. For the moment, I highlight the issue simply to motivate the addition to Sufficiency to the list of structural features that characterize bodily awareness.

2.5 Recap

Having established that bodily awareness is a distinctive form of awareness characterized by its own set of structural features, we now have our answers to the Unity and Spatiality Puzzles. Recall that the Unity Puzzle asks what it is that justifies us in positing the existence of a form of awareness consisting of only proprioception/kinesthesia, the bodily sensations, and the vestibular sense. My solution to the Unity Puzzle is that just these phenomena comprise a distinctive form of awareness, what I call bodily awareness. However, this answer raises the further question of what individuates forms of awareness. To this I answered: their structural features, or systematic regularities that pertain especially to the spatial presentation of items. This way of distinguishing forms of awareness also enables us to resolve the Spatiality Puzzle, or the question of what the difference in spatial character between exteroceptive forms of awareness such as vision and bodily awareness. Bodily awareness is often characterized as awareness of one's body 'from the inside', but this phrase can obscure what is actually distinctive about the spatial

[22]See Vignemont (2018), 44-46 and Serrahima (2019) for discussion.

presentation of the body in bodily awareness. In my account of what is distinctive about the spatial character of bodily awareness, I drew on the work of Husserl, Martin, and Bermudez and identified the features of Boundedness, Connnectedness, A-Location, B-Location, and Sufficiency. The Unity and Spatiality Puzzles thus have a common solution in the idea that bodily awareness is a *sui generis* form of awareness, distinct in kind from vision, exteroceptive touch, audition, etc. This chapter also serves one of the programmatic goals of the thesis, namely to demonstrate the utility and validity of the notion of bodily awareness by showing how appeal to it can resolve otherwise puzzling phenomena.

Chapter 3

Bodily Awareness, Perception, and Introspection

3.1 Introduction

In the previous chapter I argued that bodily awareness was form of awareness comprising proprioception/kinesthesia, the bodily sensations, and the vestibular sense, characterized by a set of distinctive structural features. In this chapter I consider the relationship between bodily awareness and other forms of awareness, in particular perceptual awareness (considered as a kind) and introspective awareness. Philosophers who study bodily awareness understandably tend to focus on its peculiarities. But in and of itself the fact that bodily awareness has certain peculiar features reveals little about its nature. After all, vision is very different from audition which is very different from touch, and so on. As Bishop Butler said, 'Every thing is what it is, and not another thing' (Butler 1827, Preface.) What is of more interest is whether bodily awareness is the same sort of thing as vision, audition, touch etc., that is, whether bodily awareness is yet another form of perceptual awareness. Here, of course, it is necessary to say what is constitutive of perceptual awareness, and then to determine whether bodily awareness satisfies these criteria. If bodily awareness is not a form of perceptual awareness, one will still want to know what category it falls into. Introspection is the only other likely candidate, with a third option being that it is *sui generis*, irreducible to any other kind of conscious awareness.

My primary contention in this chapter is that this third option is cor-

rect: bodily awareness is neither perceptual or introspective in character, nor is it a hybrid of the two forms of awareness. Instead, it is its own form of conscious awareness, albeit one which shares crucial features in common with both perception and introspection. In making this claim, I break with the mainstream.[1] Most philosophers who have expressed an opinion on the subject hold that our proprioceptive and kinesthetic awareness of our body parts is a form of perceptual awareness, a view I label *Perceptualism.* Others hold that bodily awareness is a species of introspective awareness, a view I label *Introspectionism.* Finally, many philosophers adopt a *Hybrid View*, holding that some of what I have labeled bodily awareness is genuinely perceptual (proprioception/kinesthesia and the vestibular sense, for instance) while some is introspective (bodily sensations). Against all of these views, I hold that bodily awareness belongs to its own category. Instead of trying to fit bodily awareness into these other categories we must understand it in its own right.

To first appearances, the question of whether bodily awareness is a form of perception or introspection can seem purely taxonomic and so of little philosophical significance. Yet the matter is of great importance since the reasons why bodily awareness cannot be subsumed to either perception or introspection will help us to understand its nature and its relation to other mental phenomena. As I shall argue in §3.6.3, bodily awareness is necessarily implicated in any act of perception, since bodily awareness structures all forms of perceptual awareness. As to the relationship between bodily awareness and introspection, it seems that bodily awareness exists in creatures that do not possess any first-person concept and so who cannot be said to have genuine introspective awareness of themselves as thinking things (Bermúdez 1998, 161–2). If these claims are right, then bodily awareness is not merely different from but, in crucial respects, prior to both perception and introspection. For this reason its relative neglect as a distinct form of conscious awareness is distortive, since it underplays the centrality of our bodily awareness to our mental lives.

On the view I defend, bodily awareness is a *sui generis* form of consciousness that shares certain features with both perception and introspection yet differs in kind from each. Like perception, bodily awareness is awareness of a concrete object and its sensible properties in a certain spatial mode. With

[1]Though see Gallagher (2003) and his phenomenologist predecessors such as Maurice Merleau-Ponty (2013). I will discuss Gallagher's views in more depth in §3.6.

this comes the possibility of illusion and hallucination, both of which can occur in bodily awareness, however secure its deliverances might ordinarily seem to us. However, bodily awareness differs in kind from perceptual awareness in precisely the manner it resembles introspection. For like introspection, bodily awareness is thoroughly *first-personal.* To say this is not merely to say that it grounds judgments that employ the term 'I' but to say that such judgments are *immune to error through misidentification* with respect to that term (Shoemaker 1968). Since perception, by its very nature, affords, at least in principle, awareness of myriad objects, it seemingly cannot ground judgments that have this sort of immunity, which suggests that bodily awareness cannot be a form of perceptual awareness.[2]

The plan for this chapter is as follows. I begin in §3.2 by laying out the basic puzzle that bodily awareness presents us with. The issue, briefly put, is that bodily awareness has features that both suggest that it is a form perception and that it is form of introspection. But it is standardly assumed that these are exclusive forms of conscious awareness. Hence we face the task of reconciling these claims. In §3.3 I discuss *Perceptualism*, the view that bodily awareness is a form of perception. I reject Perceptualism on the grounds that some of the features that have been alleged to be constitutive of perceptual awareness do not appear to apply to bodily awareness. In §3.4 I discuss *Introspectionism*, the view that bodily awareness is a form of introspective awareness. I reject Introspectionism on the grounds that some of the features that have been alleged to be constitutive of introspective awareness do not appear to apply to bodily awareness. In §3.5 I consider the *Hybrid View* which attempts to bifurcate bodily awareness into distinct perceptual and introspective components. I reject the Hybrid View on the grounds that it cannot account for the *phenomenological unity* of bodily awareness. Finally, in §3.6 I defend the *Sui Generis View* on which bodily awareness is a distinctive form of conscious awareness, irreducible, in whole or in part, to perceptual or introspective awareness. I end with some remarks on the significance of this result for our thinking about the mind.

3.2 The Puzzle of Bodily Awareness

[2]For versions of this argument see Gallagher (2003) and Morgan (2019). For criticism of such arguments see Chen (2009).

In the previous chapter I made the case for thinking of bodily awareness as a unified form of awareness with its own distinctive phenomenological features.[3] However, acknowledging the existence of bodily awareness forces us to squarely confront its puzzling features. The basic issue is nicely put by Brain O'Shaughnessy:

> At first blush the phenomenon of proprioception looks like a *bona fide* example of perception. And yet it is natural to entertain doubts on the matter. For one thing proprioception is attentively recessive in a high degree, it takes a back seat in consciousness almost all of the time [...] The body does not appear to consciousness as a rival object of awareness as we actively engage with our surroundings. (O'Shaughnessy 1995, 175)

The reason why bodily awareness ('at first blush') appears to be a form of perception is quite simple: the body is a physical object, and in bodily awareness one has sensory awareness of certain of its physical properties. Correlative with this is the fact that bodily awareness is liable to illusion (such as the Rubber Hand Illusion (Botvinick and Cohen 1998)) and hallucination (phantom limbs (Ramachandran and Hirstein 1998)). Since bodily

[3]Already this commits us to the rejection of *eliminative* views regarding bodily awareness. One philosopher who comes close to this denial is G.E.M. Anscombe. In her paper 'On Sensations of Position' (1962) Anscombe makes some cryptic remarks that flirt with the idea that bodily awareness lacks a robust sensory phenomenology. Her view appears to be that while there are such things as bodily sensations, and that such sensations are occasioned by bodily position and movement, we do not stand in anything like a perceptual relation to these sensations . In particular she denies that such sensations serve as evidence for our judgments about bodily position. On this view, when I have my legs crosssed, I have certain sensations in my legs, but my knowledge that my legs are crossed is not based on or grounded in such sensations. The exact import of Anscombe's denial here is difficult to assess. Read in one way, Anscombe's claim is hard to reject: it certainly is not true that we must piece together the configuration of our body by working out how our limbs would have to be disposed in order to generate the pattern of bodily sensations we are now experiencing. Read another way, however, it can seem as if Anscombe is denying that we have anything like sensory awareness of our bodies at all, or at least that our judgments concerning our bodily states depend in any way on such sensory awareness. But these latter two claims simply seem preposterous. Whatever differences there are between bodily awareness and perception, it is scarcely credible to deny that we have any occurrent sensory awareness of the position and movement of our limbs, and that our judgments about such facts, in some way or other, are grounded in such awareness. So while we should acknowledge the correctness of the first point that one might attribute to Anscombe, we should emphatically reject these latter two claims.

awareness is the awareness of a concrete physical particular and its spatial characteristics, and since for that reason it exhibits an appearance/reality distinction, there is reason to think that bodily awareness is simply a form of perception.

At the same time, however, bodily awareness has a number of features that square poorly with the idea that it is yet another form of perceptual awareness, a 'sixth sense' as it were. For one thing, as O'Shaughnessy notes, it is generally 'attentively recessive': unless something has gone wrong, we do not tend to pay much attention to our bodies in this way. This fact no doubt partly explains why bodily awareness is missing from Aristotle's list of senses, and we do not generally have a word for it.

Beyond merely being attentionally recessive, bodily awareness also has a number of features that do not obviously fit into a picture of it as a form of perceptual awareness. Most salient here is the close connection between bodily awareness and self-awareness. As Micheal Ayers puts it:

> We do have bodily sensations such as (most spectacularly) pain, and we cannot intelligibly wonder whether the body so presented is our own or someone else's. It is, indeed, the physical disposition of *myself* of which I am aware in having bodily sensations, and which, as we have seen, enters in some way into the content of all experience. (Ayers 1991, 288)

There are two ideas here that I want to draw attention to. The first is that in bodily awareness we simply seem to be presented with ourself. Whether or not we are in fact identical to our (living) bodies, there is nevertheless a powerful sense in which we experience ourselves as physically embodied living beings. This shows up most in bodily sensations such as pain, but also in willed action, where bodily movement seems to be under the direct control of our will (O'Shaughnessy 1980). It is this feature of bodily awareness that explains why we unhesitatingly—and seemingly literally—self-ascribe bodily characteristics.[4]

The second distinctive feature of bodily awareness that Ayers highlights is one that I noted in the previous chapter. There I drew attention to Husserl's observation that the body as we experience it in bodily awareness serves as the origin or 'zero-point' of all perception. Ayers, few pages prior, makes the same claim:

[4]For a classic discussion of such self-attributions see Strawson (1959), Chapter 3.

> […] our experience of *ourselves* as being a material object among others essentially permeates our sensory experience of things in general. To try to imagine experience in general free from self-awareness is like trying to imagine seeing something, but not from any point of view, or tasting something or feeling warmth, but in or at no part of the body. (Ayers 1991, 285–6)

It is clear from context that the self-awareness that Ayers means here is *bodily* self-awareness. In other words, Ayers thinks that the body, and in particular the body as one experiences it in bodily awareness, lies at the origin of every act of perception, since the body as manifested in bodily awareness constitutes our point of view or perspective on the world.

Both of these features of bodily awareness—what we can call its first-personal character and its role in shaping our perspective on the world—mark out an evident contrast with forms of perception such as vision and touch. For it is not true that whatever one sees or touches seems to one to simply be a part or feature of oneself. To state the perfectly obvious, if one sees a tree off in the distance or grabs a coffee mug one has no felt sense that one is that tree or that mug. But in bodily awareness, if one feels a body part or bodily sensation one has a vivid sense that it is one's own body part or bodily sensation. This *feeling of bodily ownership* is not an element of the Aristotelian five senses.[5]

So bodily awareness has features that both invite and undermine a perceptual treatment. Indeed, the puzzle is deepened insofar as some of those characteristics that undermine a perceptual treatment suggest that bodily awareness is introspective in character. For it is introspection that we immediately think of when we consider self-awareness and first-personal thinking. Yet perception and introspection are generally regarded as exclusive forms of awareness.[6] Perception is always perception of some aspect of the mind-dependent, objective world. Introspection, by contrast, is always awareness of some aspect of the mind-dependent, subjective realm that is one's own mind. Bodily awareness, therefore, presents us with a puzzle, indeed a challenge. This general problematic frames the chapter. My way out is to claim that though bodily awareness shares key features with both perception and

[5] I take up this topic in the next chapter, wherein I elaborate on the nature of this feeling of bodily ownership.

[6] An exception to this is Armstrong (1994) who defends a perceptual account of introspection.

introspection, it is fundamentally distinct from each.

3.3 Perceptualism

I will first assess Perceptualism. Doing so will require canvassing answers to the question of what it means to say that we have *perceptual* awareness of something. I will survey some representative attempts and argue that they either are too watered down to provide a substantive account of the nature of perception or else they impose conditions on perception that bodily awareness fails to meet.

I begin by stating the thesis:

Perceptualism: Bodily awareness is a species of perceptual awareness.

Many philosophers and psychologists who have have considered the question characterize bodily awareness—or at least its proprioceptive/kinesthetic and vestibular aspects—as a form of perceptual awareness. Some no doubt classify bodily awareness as perceptual without meaning much by it. After all, to say that I 'perceive' my body in bodily awareness may be no more than to say that I am aware of it. For we do use the word 'perceive' in a generic sense, so that I I might be said to 'perceive' that Bernie Sanders is a better candidate than Joe Biden. This way of using the term 'perceive' has no theoretical implications, but not every instance of that claim that bodily awareness involves perception is as denuded as this. It is clear that many researchers believe that bodily awareness is of the same type or kind as paradigmatic instances of perceptual awareness such as vision or audition. This is the claim that I want to explore. It will turn out, to no great surprise, that whether bodily awareness is a form of perceptual awareness will depend on what one means by 'perception.'

Our basic fix on the notion of perceptual awareness is given by its paradigm instances: vision, audition, touch and, to a lesser extent, taste and smell.[7] Roughly speaking, what these phenomena all have in common

[7]Heretofore philosophical attention on perception has mostly been focused on visual awareness, though fortunately the tide is now turning. See, for instance, O'Callaghan (2017).

is that they are ways that conscious subjects have of becoming aware of aspects of the physical environment. The Perceptualist claims that this list is incomplete, and that bodily awareness should be added to it. For this to be a substantive claim we need a fleshed out notion of what perceptual awareness amounts to beyond a mere list. Perceptualism about bodily awareness is defended, in one form another, by M.G.F. Martin (1995), José Luis Bermúdez (1998), Ellen Fridland (2011), Ignacio Ávila (2017), Frederique de Vignemont (2018), John Schwenkler (2013), and, in a limited and qualified way, Shaun Gallagher (2003), to name just a few. However there is no shared consensus among these figures as to what it means to say that bodily awareness is a form of perceptual awareness, nor do these authors' accounts obviously all square with another. Our task is to sort through the matter.

The minimal claim that people seem to have in mind in calling bodily awareness a form of perceptual awareness is a claim we can call *Object Directedness:*

Object Directedness: Bodily awareness involves sensory awareness of particulars, including physical objects, and their sensible qualities (primary and secondary qualities).

The idea lying behind Object Directedness is that what is characteristic of perceptual awareness is that it provides us with occurrent sensory awareness of objects and their sensory qualities. Object Directedness is just the thesis that this holds of bodily awareness as well. The truth of Object Directedness is enough for proprioception and kinesthesia which seem, by their very specification, to consist in awareness of one's body and certain of its physical features (e.g. its disposition, whether a given body part is moving, etc.) Object Directedness is more controversial when applied to bodily sensations such as pain and the sense of balance. Some philosophers who think that proprioception/kinesthesia is object directed would deny that awareness of bodily sensations is perceptual in character (Shoemaker1986, 109; Aydede 2017). Generally, these philosophers are thinking of pains as mental states, which seemingly implies that our awareness of them is introspective rather than perceptual.[8] The sense of balance is discussed less, so it is harder to tell how it fits into the thinking of Perceptualists, but seems fair to say that

[8]I am here ignoring the possibility of adopting a perceptual view of introspective awareness itself. For such a view see Armstrong (1994).

it less obviously object directed than proprioception/kinesthesia.

It is clear that many defenders of Perceptualism mean no more in calling bodily awareness a form of perception than that Object Directedness is true of it. M.G.F. Martin (1995), for instance, explicitly defends a "perceptual model of bodily sensation" (268-9) and what he means by this is that bodily awareness, and in particular awareness of bodily sensations, involves the awareness of particular body parts. As he puts it:

> When you feel an ache in your left ankle, it is your ankle that feels a certain way, that aches. Now ankles are no less components of the physical world than are rocks, lions, tables, and chairs. So at least to first appearance, bodily sensation is no less concerned with aspects of the physical world—in this case one's body—than are the experiences associated with the traditional five senses.[9] (1995, 268)

Similarly, Brian O'Shaughnessy maintains that 'proprioception' is a form of perception and by this he means only that it satisfies something like Object Directedness. He says:

> [...] we have here [with proprioception] an attentive experience in which a small sector of physical reality appears one way, which is to be sharply distinguished from cognitive attitudes of all kinds, even though it naturally sustains such. In a word, a perceiving. (O'Shaughnessy 1995, 176)

Aside from the focus O'Shaughnessy places on the phenomenon of attention, the content of the claim that bodily awareness is an "example of perception" comes only to the claim that in it "a small sector of physical reality appears one way" (176) to the subject.

While it is certainly possible to use the word 'perception' in such a way that it means no more than that a form of awareness is object directed, this threatens to drain the claim that bodily awareness is a form of perception of much of its interest. For one thing, the relationship between perception

[9]Note that Martin is not here assuming that bodily sensations themselves are physical things. Nor is he denying that awareness of such sensations involves 'subjective qualities or qualia' (268). The claim is merely that one experiences such sensations in parts of one's body, which is itself a physical object.

and the phenomenon of object directedness is less clear than it might first appear. For instance, taste and smell are generally regarded as forms of perceptual awareness, but they do not seem to be object directed in the way that vision and touch are. Medium sized physical objects play a very different role in the case of smell than in vision, raising doubts as to whether Object Directedness represents any kind of general phenomenological truth about forms of perceptual awareness. In a word, there is reason to doubt whether Object Directedness is a necessary feature of forms of perception.

There is also reason to doubt whether Object Directedness is a sufficient condition. Thought about physical objects here poses a challenge. If I think about my dining room table I am, in a sense, aware of a physical object, yet it would not be correct to say that I perceive the table. One might object that cognition is not *sensory* awareness, and that what is essential to perception is that it involves *sensory* awareness of physical objects. However, the notion of sensory awareness is less clear here than one might hope. In thinking about the table, I might well have some more-or-less vivid mental imagery. So the relevant contrast cannot simply be whether there is any sensory phenomenology attendant to the form of awareness. Instead, what seems to differentiate genuine perception of the table from mere imagination of it is something like the table's causal role in bringing about the experience. Genuine perception, one might say genuine awareness, occurs only when the subject is appropriately causally related to the object in question. That much seems built in to our concept of perceptual awareness.[10] However, working out causal conditions on states like seeing, knowing, etc. has proven notoriously difficult due to the well-known problems posed by deviant causal chains (Peacocke 1979).

Even if one can solve the problem posed by deviant causal chains, further issues remain. For one thing, there is no antecedent reason to believe that the very same type of causal relationship which obtains when one sees or hears an object obtains when one feels a pain in one's leg or notices that one is upside down. If some causal condition C is constitutive of perceptual awareness, then C must obtain in any instance of perceptual awareness. Yet not only are there obvious differences in the way we causally relate to objects in different sensory modalities, but there are further differences between these forms of awareness and bodily awareness. Vision and audition, for instance,

[10]For a classic statement of this idea see Grice (1961). For some dissent see Hyman (1992).

are both distance senses which operate at spatial remove form their objects, whereas touch and taste are contact senses. Bodily awareness, for its part, differs from all of these forms of awareness. For one thing, there is no common causal factor involved in bodily awareness: the process by which one feels the movement of one's arm is completely different from the process by which one feels a burn in one's hand which is, in turn, completely different from the process by which one notices that one is upside down.

Moreover, the mere fact that bodily awareness involves causal relations of some sort is hardly sufficient to show that it is perceptual in character. If I introspect one of my own thoughts, say the thought *I'm thinking* ϕ, then no doubt this act of introspective awareness involves some causal relations between different events in my brain. Yet the mere fact that such awareness is underpinned by certain causal facts does not suffice to show that introspection is a *bona fide* form of perceptual awareness, or if it does, it does so only because that is all we are meaning by the term 'perceptual awareness.' Finally, it is not even clear that bodily awareness always does involve a causal relation in the way that perceptual awareness is supposed to. It is a common occurrence to feel pain in a body part that is not injured and whose nociceptors are not activated. In such cases of *referred pain* there is no relevant causal relation obtaining between the body part that has a pain in it and one's awareness of that pain (Wall and Jones 1991, 43). Yet despite that, cases of referred pain seem to involve genuine awareness of pain in a body part inasmuch as 'ordinary' pain experiences do. For these reasons, it is at the very least not obvious that whatever causal condition is constitutive of perceptual awareness—granting for the sake of argument that there is one—is involved in every genuine act of bodily awareness.

3.3.1 The Nature of Perceptual Awareness

Perceptualists, as a rule, are impressed by certain structural similarities between bodily awareness and paradigmatic instances of perception—Object Directedness and the obtaining of a causal relation between the object of awareness and one's awareness of it—but they generally fail to acknowledge, or at least fail to acknowledge the importance of, equally significant differences. Bodily awareness fails to instantiate other features that have seemed, to many philosophers, constitutive of perception. For instance, many have claimed that there is a constitutive relationship between the notions of per-

ception and *objectivity* or *mind-independence*, so that perception is necessarily perception of the mind-independent world. Many would hold that perceptual awareness involves not just Objected Directedness, but a different thesis we can label *Objectivity:*

Objectivity: To stand in a relation of perceptual awareness to some object x or feature F, x or F must be mind-independent, where for an object x to be mind-independent is for its existence to not constitutively depend on the occurrence of any particular act of awareness, and for a feature F to be mind-independent is for it to be such that none of its instances constitutively depend for their occurrence on the occurrence of any particular act of awareness.

The claim that perceptual involves a commitment to Objectivity falls out of the idea that perceptual awareness is a confrontation with mind-independent reality. As John Hawthorne and Tamar Gendler put it in the introduction to their edited volume on perceptual experience, "perception seems to put us in direct contact with the world around us: when perception is successful, we come to recognize—immediately—that certain objects have certain properties" (Gendler and Hawthorne 2006, 1). Unless one is an idealist or panpsychist, this world is an objective world, one whose constitution is not fundamentally mental. Objectivity therefore tells us that one can have genuine perceptual awareness only of what is 'there anyway', independent of the awareness of any conscious subject.

Whatever the merits of the proposal that Objectivity is a constitutive condition on perceptual awareness, awareness of pains and other bodily sensations does not seem to fit into this picture of perception. Pains and other bodily sensations appear to be subjective or mind-dependent in just the manner ruled out by Objectivity: a given pain constitutively depends for its occurrence on a subject's awareness of it; there are no unfelt pains (Aydede 2005, 4). Obviously one could attempt to deny that pains are mind-dependent in this way, or attempt to deny that pains are, properly speaking, an element of bodily awareness, but neither of these options has much intuitive appeal. In any event, I argue against thinking of pain experience as the awareness of any objective bodily condition in Chapter 4. So it does not seem that a conception of perceptual awareness bolstered by Objectivity is suited to bodily awareness.

Another condition that some philosophers have held to be constitutive of

perceptual awareness is that of *perceptual constancy:*

Constancy: What it is for a form of awareness A to count as genuinely perceptual is for A to employ certain perceptual constancy mechanisms.

One of the difficulties in appealing to the phenomenon of perceptual constancy in specifying the nature of perceptual awareness is saying just what the phenomenon consists in. As Jonathan Cohen puts it, the 'textbook' definition of the phenomenon of perceptual constancy is "nothing more or less than a stability in perceptual response across a range of varying perceptual conditions" (Cohen 2015, 624). But as he goes on to note this definition cannot be the full story, for constancy also involves variability in one's perceptual response to given feature. An instance of the contrast emblematic of perceptual constancy is given by looking at a uniformly colored object under variegated lighting. In general the object will look uniformly colored to a given subject. But careful examination might reveal significant changes in illumination across the surface of the object, changes which in some way affect the appearance of the surface. What we find here is something constant (the perceived color of the surface) and something inconstant (the appearance of that color as conditioned by different illumination at different points). This duality characterizes the phenomenon of perceptual constancy. Similar constancy phenomena occur for other visual properties such as shape, and in other sense modalities, as with perceived loudness in audition (Cohen 2015, 624).

Some philosophers take the phenomenon of perceptual constancy not merely to be an incidental feature of perceptual awareness, but to reveal its nature. This idea is the centerpiece of Tyler Burge's *Origins of Objectivity* [Burge2010]. In that work, Burge argues that perceptual constancies are "the primary mark of perceptual objectification" (409) and that "their presence in a sensory system is necessary and sufficient for the system's being a perceptual system" (413).[11] For Burge, a system crosses the line from being merely sensory to being genuinely perceptual when it starts to employ mechanisms of perceptual constancy, mechanisms which Burge thinks involve the representation of objective features of the environment. Whether or not Burge is right to regard constancy phenomena as constitutive of perceptual awareness, he is certainly right to emphasize their centrality to the operation

[11]For criticism see Campbell (2011) and Ganson, Bronner, and Kerr (2014).

of our perceptual systems. Even if they are not constitutive of perception, then are certainly typical of it since perceptual systems face the challenge of portraying an objective world to us in spite of changing conditions of perception.

While Burge's account of the nature of perception is certainly open to criticism, he nevertheless succeeds in articulating another crucial difference between paradigmatic forms of perceptual awareness such as vision and audition and aspects of bodily awareness such bodily sensations and the sense of balance. For as Burge notes, "[n]umerous sensory systems in human beings are not perceptual systems" (2010, 421) including "many sensory systems that [a]ffect balance" (421) and 'capacities to feel heat and pain' (421). In bodily awareness there is no obvious analogue of an object appearing to be uniformly colored despite differences in illumination across its surface or an object appearing to have a single constant size despite its growing distance from the perceiver. Why does bodily awareness lack these constancy phenomena? A.D. Smith provides us with one possible answer. As he puts it, "there are no perspectives to be had on our sensations, and so they have no further aspects that transcend our current awareness of them" (Smith 2002, 135). In other words, Smith holds that the lack of phenomenological constancy in bodily awareness is explicable in terms of structural differences between it and forms of perceptual awareness, in particular the role of a *perspective* in a given of form of awareness. For Smith, the presence of perceptual constancies in a given modality is bound up with the fact that one can take different experiential perspectives on objects and qualities in that modality. So in vision, one's changing visual perspective on the seen objects and qualities changes the way that they appear (180-5). But bodily awareness involves no changing perspective on one's body, and so there is no need to present body parts and bodily features as unchanging despite variation in one's perspective on them (152-3). For this reason, bodily awareness employs no constancy mechanisms. They are simply unnecessary given the kind of awareness that it is, namely non-perspectival awareness, a term I take from Gallagher (2003), 62.

Finally, another set of differences between bodily awareness and perceptual awareness emerges from Sydney Shoemaker's rejection of any perceptual model of introspection in 'Introspection and the Self' (1986) and later essays (1994a). In these works Shoemaker identifies several conditions that he regards as individuative of perceptual awareness. He says:

> Ordinary modes of perception admit of our perceiving, successively or simultaneously, a multiplicity of different objects, all of which are on a par as nonfactual objects of perception. […] Perceived objects are candidates for several sorts of perceptually based identification. One can identify one of them, or misidentify it, as being as being of this or that sort…[a]nd one can identify one of them or misidentify it as being a certain particular thing [….] Where the perceived object is a continuant, it will also be a candidate for what Strawson calls 'reidentification,' the identification of something observed at one time with something perceived at another time. […] in the most favorable case, where there has been continuous observation of a thing over a period of time, it will be grounded on a sort of perceptual 'tracking' that presents the observer with an observed continuity of properties of a kind that constitutes the most direct evidence of identity, for things of that sort, that perception can provide. (1986, 108)

Following Bermúdez's lead (1998, 136), I think it is useful to draw out three principles here in addition to Object Directedness, namely *Multiplicity*, *Identification*, and *Tracking:*

Multiplicity: Any form of perceptual awareness A permits one to be aware of a multiplicity of different objects x_1 … x_n both at a time and at different times.

Identification: Any form of perceptual awareness A involves the perceptual (as opposed to cognitive) identification of objects both as individuals and as members of kinds.

Tracking: Any form of perceptual awareness A involves the tracking of particulars over time and through changes in their location.

These features apply most obviously to visual, auditory, and tactile awareness, which present subjects with manifold objects, and thus require subjects to identify and track them.

Shoemaker's contention in his essay is that these features of perceptual awareness do not apply to introspective awareness and so, for that reason, introspective awareness is not a form of perception. But many subsequent

discussions of the question of whether bodily awareness is a form of perception take Shoemaker's discussion of these features of perception as their starting point. I'm thinking here in particular of works by M.G.F. Martin (1995), José Luis Bermúdez (1998), Quassim Cassam (1995), Shaun Gallagher (2003), Ellen Fridland (Fridland 2011) and Ignacio Ávila (2017). M.G.F. Martin, for instance, engages with Shoemaker's work when he defends a *sole object* account of bodily awareness, or a view of it on which "[b]odily sensations, together with kinesthesia, proprioception, and the vestibular sense, amount to an awareness of one's body that is only of one's own body and its parts" (1995, 273). This account of bodily awareness seems to require the rejection of Multiplicity.[12] Martin responds to this by claiming that though bodily awareness does not satisfy Multiplicity, it does satisfy Object Directedness, since in virtue of experiencing our body as a bounded region embedded in space, we experience it as a physical object.

The fundamental question here, however, is whether the fact that a form of awareness satisfies Object Directedness is sufficient to demonstrate that it is a form of perceptual awareness in any substantive sense. Both because of the significant differences between bodily awareness and perceptual awareness that I have articulated, and because of certain affinities between bodily awareness and introspection that I shall turn to in the next section, I think that the insistence on classifying bodily awareness as a form of perceptual awareness is unmotivated. Everything that is plausible in that idea can be captured by simply saying that bodily awareness satisfies Object Directedness. This distinction will be especially important if we find that bodily

[12]Although see Schwenkler (2013), who argues the the fact that bodily awareness involves the awareness of distinct body *parts* means that it satisfies Multiplicity. Evaluating the merits of Schwenkler's arguments is not my primary task here, but for what it's worth I don't think his argument succeeds. Schwenkler claims that body parts, rather than the body as a whole, are the 'principal' objects of bodily awareness, meaning that bodily awareness does satisfy Multiplicity. But it's not clear that being aware of, say, sensations at different locations in one's body amounts to being aware of those body parts as distinct objects. If I look at a book cover, I will see different parts it as being differently colored, but we wouldn't say that I thereby see multiple objects, to wit the differently colored parts. Similarly, we could equally say that in being aware of different sensations at different body parts, it's not really the case that I'm aware of those body parts as distinct objects, rather than as subregions of my whole body. In other words, being aware of sensations at different locations doesn't necessarily make those locations the 'primary objects' of awareness, any more than the fact that I see each part of the book as colored makes the parts of the book, rather than the book as a whole, the 'primary object' of visual awareness.

awareness and perception play very different cognitive roles for the subject. Indeed, I will go on to argue that they do, and in particular that bodily awareness has so close a connection to first-personal thought and other first-personal capacities that it would obscure, rather than clarify, matters to lump it in with other forms of perceptual awareness. Substantiating this claim requires exploring the notion of first-personal awareness in more depth. I do this in the next section by considering whether bodily awareness might be treated as a form of introspective, rather than perceptual, awareness.

3.4 Introspectionism

While some philosophers are impressed by the similarities between bodily awareness and perception, others are impressed by equally salient similarities between bodily awareness and introspection. Most notable here is that both bodily awareness and introspection appear to be distinctively first-personal forms of awareness, in the sense that they ground uses of the first-person pronoun 'as subject', to adopt the terminology of Ludwig Wittgenstein (Wittgenstein 1958, 66–67). Use of terms such as 'I' and 'my' as subject contrast, for Wittgenstein, with uses of those terms 'as object.' Wittgenstein cites self-ascription of a toothache' as an example of the former and a self-ascription of a broken arm as an example of the latter (67). For Wittgeinstein, the difference between these two uses of first-personal expressions consists in the fact the latter, but not the former, provide for "the possibility of an error" (67). In other words, it is possible for the utterer of 'My arm is broken' to be mistaken as to the identity of the person whose arm is broken, if for instance she makes this statement on the basis of visual awareness of a broken arm, since it is possible, at least in principle, that the arm she is seeing is not her own. By contrast, the statement 'I have a headache', when made on the basis of introspective awareness of one's pain experience, does not admit of any such error since it does not involve what Wittgenstein calls "the recognition of a particular person" (67).[13]

This distinction was taken up by Sydney Shoemaker (1968) who charac-

[13]In fact Wittgenstein does not speak here of introspective awareness, and might well reject the suggestion that there is such a thing. Considering these questions would take us far afield, so I proceed on the assumption that there is such a thing as introspective awareness and that it is on the basis of such awareness that we know about our pains.

terized it in terms of the notion of *immunity to error through misidentification.* Uses of the first-person as object admit of errors of misidentification: in the above example, my assertion that my arm is broken relies on the identification of the arm I see with my own arm. That identity could fail to hold, leaving me in a situation where I might know that someone's arm is broken yet not have knowledge about whose arm it is. By contrast, the statement 'I have a headache' does not seem to admit of any such error, since it does not rely on any identification on the part of the subject. Shoemaker articulates the notion of error through misidentification as follows:

> … to say that a statement 'a is ϕ' is subject to error through misidentification relative to the term 'a' means that the following is possible: the speaker knows some particular thing to be ϕ, but makes the mistake of asserting 'a is ϕ' because, and only because, he mistakenly thinks that the thing he knows to be ϕ is what "a" refers to.' (Shoemaker 1968, 557)

It is this type of immunity that Shoemaker claims is essential to those uses of the first-person pronoun that are uses as subject, that embody one's first-personal perspective on oneself.

It is crucial to see that such immunity is not a feature of expressions *per se* but of expressions made on particular occasions on the basis of certain epistemic grounds (Pryor 1999, 281–2). For instance, the use of the first-person pronoun in the expression 'I'm feeling sad' is immune to error through misidentification when made on the basis of introspective awareness, but it is liable to such errors when made on other bases. If I see a sheet of paper in my therapist's office that says 'A.B. is depressed' I might infer that I am the 'A.B.' to whom she is referring. If I then go on to assert 'I am depressed' on that basis, my utterance will be subject to error through misidentification in just the way Shoemaker indicates, since that judgment is explicitly based on my identification of myself with the 'A.B.' referred to in her notes. The relevance of this for our purposes is that introspective awareness is just the sort of epistemic ground which renders such expressions immune to error through misidentification.

While our introspective knowledge of our own minds has received most of the focus in studies of immunity to error through misidentification, starting with Gareth Evans (1982) philosophers have also investigated the idea that bodily awareness too is a source of such immunity. Evans noted that certain

judgments about bodily matters, when made on the basis of proprioception, also seem to be immune to error through misidentification relative to the first-person pronoun. In an oft-quoted passage he says:

> None of the following utterances appears to make sense when the first component expresses knowledge gained [via bodily awareness]: 'Someone's legs are crossed, but is it my legs that are crossed?'; 'Someone is hot and sticky, but is it I who am hot and sticky?'; 'Someone is being pushed, but is it I who am being pushed?' There just does not appear to be a gap between the subject's having information (or appearing to have information) in the appropriate way, that F is instantiated, and his having information (or appearing to have information) that he is F; for him to have, or appear to have, the information that the property is instantiated just is for it to appear to him that he is F. (1982, 220–1)

If Evans' suggestion is right then it is natural to venture that bodily awareness too is a genuinely first-personal form of awareness in the sense we have articulated: it gives rise to judgments that exhibit this *immunity property*, since it does not present our body to us in a way that allows for misidentification.[14]

Impressed by this similarity, one might be tempted to hold that bodily awareness is simply a species of introspective awareness, thereby adopting *Introspectionism:*

Introspectionism: Bodily awareness is a species of introspective awareness.

Now, characterizing the nature of introspective awareness is no easier a task than characterizing the nature of perceptual awareness, and I cannot here offer a definitive account of it, or survey all extant attempts to do so. But at a minimum, introspective awareness is the sort of awareness we have of our occurrent mental states: thoughts, emotions, experiences, and so on (Gertler 2011, 2). We have just seen that it grounds judgments that exhibit the immunity property and that fact seems bound up with the fact that introspection

[14]One complication here, much discussed in this literature, concerns the possibility that my proprioceptive experience might result from being 'hooked up to' a body other than my own. See Salje (2017) for recent discussion of such cases.

is a form of self-consciousness. After all, the reason why I am justified in asserting 'I am F' when aware of some instance of F in introspection is that the only instances of F that I can be aware of in these ways are those are instantiated in or by myself. For this reason, the sort of knowledge embodied in statements grounded in such awareness has seemed to many philosophers—rightly or wrongly—to be of the most secure kind, a claim epitomized in Descartes' *Cogito* (Descartes 1984, Second Meditation).

Introspectionism is less commonly held view than Perceptualism, but one can find discussion of it in the literature on bodily awareness. For instance, Quassim Cassam considers, though he ultimately rejects, the view that bodily awareness is a form of introspective awareness in 'Introspection and Bodily Self-Ascription' (1995). Cassam imagines that one line of response to Hume's infamous claims about the elusiveness of the self in experience would be to simultaneously hold that 'the forms of bodily awareness [...] [are], in Shoemaker's sense, awareness of oneself 'as an object' (312) and that bodily awareness is 'genuinely introspective' (312). If one adopts both of these claims then one can hold that we are introspectively presented with ourselves as objects of bodily awareness, directly contradicting Hume's denial of any such awareness. Cassam attributes such a view to Michael Ayers, on the basis of comments such as "our experience of *ourselves* as being a material object among others essentially permeates our sensory experience of things in general" (Ayers 1991, 28)). In fact, I do not think that these claims commit Ayers to Introspectionism. Cassam seems to be assuming that any awareness which might properly be said to count as self-awareness must be introspective in character, but this seems to me to be an unhelpful stipulation. J.J. Gibson, for instance, held that every act of perceptual awareness was also, at the same time, an act of self-awareness (Gibson 1979, 108). Whether or not this claim of Gibson's is correct, it hardly seems right to say that *if* it is correct then perception too is a form of introspection. In other words, it is a substantive—and highly questionable—claim that all self-awareness is introspective awareness, not a mere matter of stipulation.

A philosopher who more directly defends Introspectionism is Bill Brewer (1995). In 'Bodily Awareness and the Self' Brewer attempts to fashion a 'direct' argument against Cartesian dualism, in the spirit of Evans' ambitious anti-Cartesian argument in *The Varieties of Reference*. Brewer thinks that Evans' argument fails as it relies on contentious claims that the Cartesian will simply reject, namely that very same object is the bearer of both physical and mental predicates. But Brewer thinks that he has a direct argument

which demonstrates that certain physical objects bear mental properties:

> … in bodily awareness, but not in sense perception, psychological properties are themselves located in the physical object of awareness, namely the body. Thus there is some prima facie support for the idea that the body part in which [a] sensation is set is a part, not a mere possession, of the conscious mental subject, that the subject of experience extends physically to encompass the bodily location of sensation. (297)

Brewer's claim here is that bodily awareness—or at least awareness of bodily sensations—presents some of our mental states to us as embodied: as being instantiated in some part of our body. He takes this to suggest that in such awareness we are presented with ourselves as physical bearers of psychological properties, thereby undermining the Cartesian dichotomy between mind and body.

While I share Brewer's rejection of Cartesian dualism and his attraction to the claim that there is a 'contrast between bodily sensation and 'external' sense perception', I do not think that this argument succeeds. The issue, simply point, is that there are good reasons to distinguish awareness of bodily sensations from introspective awareness. If I am introspectively aware of a certain episode of thinking, then I can be certain that such an episode of thinking is occurring. In other words, my introspective awareness of a mental episode suffices for its existence. However, nothing like this is true of bodily awareness. The experience of phantom limbs shows that I can seemingly be aware of a body part when none exists, a phenomenon which has no parallel in the case of thought (Ramachandran and Hirstein 1998). For this reason, awareness of a pain in a body part does not suffice for the existence of a pain in that body part. So the distinction between bodily awareness and introspective awareness is not purely a matter of verbal stipulation, but also seems to track substantive epistemic differences which trace back to the natures of the entities that we are aware of in these different ways. Thoughts, emotions, and experiences are experience-dependent in a way that body parts are not. Since introspection is awareness of one's mind, it is suited to make one aware of the former but not the latter. Hence we should reject Brewer's assimilation of bodily awareness, in particular awareness of bodily sensations, to introspective awareness.

Crucially, the considerations that undermine Brewer's argument are perfectly general. The strongest reason for distinguishing between bodily aware-

ness and introspection is that the former is subject to illusion and hallucination in ways that the latter is not. The existence of illusions such as the Rubber Hand Illusion (Botvinick and Cohen 1998) and hallucinations such as phantom limbs creates a striking parallel between bodily awareness and perception, since there are no clear analogues of either in the case of introspective awareness.[15] However, we have also found reason to reject the idea that bodily awareness is simply a species of perceptual awareness. So we find ourselves in a bind, unable to straightforwardly subsume bodily awareness to perception or introspection, yet finding strong parallels with each. I will next consider a hybrid position which seeks to reconcile these facts without adopting the view that bodily awareness is primitive. I will argue that the proposal fails and that our only alternative is to hold that bodily awareness is a *sui generis* form of awareness, distinct from both perception and introspection.

3.5 The Hybrid View

In light of the foregoing discussion one might be tempted to split the difference between Perceptualism and Introspectionism and adopt the *Hybrid View:*

Hybrid View: Proprioceptive/kinesthetic and vestibular awareness is perceptual in character while awareness of bodily sensations is introspective in character.

The Hybrid View tries to hold on to the appealing aspects of both Perceptualism and Introspectionism and to square them in a consistent view. Recall that the problem with Perceptualism is that awareness of bodily sensations does not seem perceptual in character while the problem with Introspectionism is that awareness of body parts opens the subject up to epistemic liabilities that introspection does not. A natural thought is that these issues arise from the attempt to fit all of the phenomena we are grouping together under the heading 'bodily awareness' into a single model. Instead, one might regard bodily awareness as a heterogeneous phenomenon with perceptual

[15]Which is not to say that introspection is infallible, or anything of the sort.

and introspective aspects. If this proposal works then there is no need to postulate bodily awareness as a third, primitive form of conscious awareness.

Brewer himself considers a Cartesian version of this sort of proposal. He says:

> In particular, when I am aware that I am being prodded painfully just above my right knee, say, I am aware of both a psychological and a material condition. Thus, on the Cartesian line sketched above, my judgment 'I am being prodded painfully just above my right knee' is really a misleading composite of two logically independent 'self'-ascriptions: 'I_e am in pain' and 'I_b am being prodded just above the right knee' where 'I_e' refers to my true self, the Cartesian pure ego, and I_b refers to the body that the Cartesian ego is contingently bound up with, and that is therefore mine but is not *me.* (Brewer 1995, 296)

However, one does not have to be a Cartesian to adopt the Hybrid View. A physicalist could hold that our awareness of bodily sensations is introspective and that proprioceptive awareness of our limbs is perceptual without going in for a Cartesian metaphysics. What is essential to the Hybrid View is the idea that awareness of the objective body and the subjective sensations we experience in it are of a wholly different character.

The basic problem with the Hybrid View is that it does not respect the *phenomenological unity* of bodily awareness.[16] The issue, simply put, is that bodily awareness presents our body parts and bodily sensations in the same manner. Indeed it presents our bodily sensations as inhering in our bodies, so that there is a division, in experience, between awareness of the pain and awareness of the knee when one feels a pain in one's knee (Martin 1995, 268). One may shift one's attention from the knee to the pain, but this effort is no different than shifting one's attention from the shape of a seen object to its color. What we have in both cases are different objects and qualities presented in a single sensory mode. It is this basic phenomenological observation which motivates treating bodily awareness as a single form of awareness in the first place.

[16]In effect, this is Brewer's point in drawing attention to our awareness of bodily sensations, though by my lights he goes wrong in claiming that sensations are mental states and that our awareness of them is introspective.

In response to this observation the best that the proponent of the Hybrid View can do is concoct a story as to why we might think that these two forms of awareness really are one. One suggestion is that the two forms of awareness are united in their object. On this proposal, both proprioception/kinesthesia and the bodily sensations are, in very different ways, 'directed towards' our bodies. Proprioception/kinesthesia are body-directed in virtue of being perceptual awareness of body parts. The experience of pains and other bodily sensations, not being perceptual, must then be body-directed in some other way. Various proposals have been made here. Perhaps sensations are body-directed in virtue of the fact that they are caused by occurrences in certain body parts, or that they prompt actions directed towards those body parts, etc. For instance, Gilbert Ryle held that "we learn both to locate sensations and to give their crude physiological diagnoses from a rule-of-thumb experimental process, reinforced, normally, by lessons taught by others" (Ryle 1949, 105). In other words, Ryle holds that we locate pains in body parts because those are the body parts that we need to intervene on to relieve the pain: "[t]he pain is in the finger in which I see the needle; it is in that finger by the sucking of which alone the pain is alleviated" (105). Such an account could be used to undermine the alleged phenomenological unity of bodily awareness by reinterpreting the way in which pains and other bodily sensations are said to be 'located' in body parts, namely only in virtue of the (alleged) fact that those are the body parts that one must intervene on in order to affect one's pain experience.

Without considering every possible form such a debunking account might take I will just note that none of them seem to have have any independent plausibility.[17] That is, adoption of such a view would be wholly motivated by independent philosophical arguments which are taken to show that proprioception/kinesthesia and awareness of bodily sensations *must* be different types of awareness. Nothing in experience itself motivates treating awareness of my knee and awareness of the pain in it as wholly distinct and separable phenomena; quite the contrary, in fact. For as Brian O'Shaughnessy has noted, it makes little sense to even conceive of pain that does not inhere in one's body. As O'Shaughnessy says it is "all but impossible to comprehend a claim concerning sensation position that detaches it from actual or seeming limb" (O'Shaughnessy 1980, 162). For this reason, I am setting the Hybrid View to the side. While it avoids the pitfalls of Perceptualism and Intro-

[17]See Hyman (2003) for trenchant discussion.

spectionism, it lacks any independent motivation. I suspect that its primary appeal comes from the failure to see any alternative. For this reason, articulating a positive account of the nature of bodily awareness which shows it to be different in kind from perception and introspection provides the best sort of reason for rejecting the Hybrid View.

3.6 Bodily Awareness as Sui Generis

In this section I motivate and develop an alternative to Perceptualist and Introspectionist views of bodily awareness. On the view I develop, bodily awareness shares key features with both of these forms of awareness but is different in kind from each of them. Like perception, bodily awareness satisfies Object Directedness: it puts us into direct sensory contact with our body and certain of its features. For this reason, bodily awareness, like perception, is also subject to illusions and hallucinations, that being the risk whenever a form of awareness presents one with some aspect of the objective world. However, like introspection, and unlike perception, bodily awareness is inherently first-personal: when one is aware of one's body in bodily awareness one is aware of it in a way that leaves open no question about whose body it is. For this reason, bodily awareness licenses judgments that are immune to error through misidentification relative to the first-person pronoun, judgments such as *my arms are crossed.* Perceptual awareness has no corresponding feature, since while it may license judgments that are immune to error through misidentification such as perceptual demonstrative judgments such as *that is red* (Evans 1982, 180) such judgments are not first-personal. In order to accommodate all of these features, we need to theorize bodily awareness in its own right rather than attempt to fit into a pre-existing mold.

I call this view the *Sui Generis View:*

The Sui Generis View: Bodily awareness is a *sui generis* form of conscious, distinct in kind from perception and introspection though sharing distinctive features of each.

The Sui Generis View earns its plain label since its chief commitment is that bodily awareness is its own phenomenon, albeit one with certain important

commonalities with perception and introspection. Motivation for this view will emerge from my discussion. I begin by considering an argument due to José Luis Bermúdez that purports to show that bodily awareness must be form of perceptual awareness. I then turn to some criticisms of Bermúdez's argument due to Shaun Gallagher, Ellen Fridland, and Igacio Ávila which I use to develop my own proposal. As will emerge from my discussion, the primary motivation for regarding bodily awareness as distinct from perception is that in certain crucial respects it contrasts with it and complements it. But if bodily awareness contrasts with and complements bodily awareness, then they cannot be instances of the same phenomenon. I end by articulating some reasons why, other than a fetish for taxonomic accuracy, it is important to recognize the distinctness of bodily awareness.

3.6.1 Bermúdez's Argument

I'd like to begin my case for treating bodily awareness as a *sui generis* form of conscious awareness by considering in depth José Bermúdez's case for Perceptualism and some criticisms of it due to Shaun Gallagher, Ellen Fridland, and Ignacio Ávila. Bermúdez provides a sophisticated defense of Perceptualism, and the defense he offers of that position will prove instructive for the view I develop. Bermúdez argues that bodily awareness counts as a form of perceptual awareness since it satisfies Shoemaker's constitutive conditions on object awareness—in particular Multiplicity, or what Bermúdez calls the *multiple-objects constraint* (Bermúdez 1998, 136)—in virtue of the role it plays in structuring our perceptual awareness of the world. Bermúdez's thought is that bodily awareness is one element of a unified 'sensory field' along with vision, audition, touch, taste, and smell. Since all of these forms of awareness are integrated so as to give us a coherent and unified experiential perspective on the world, one which acquaints us with myriad objects, each component of these sensory field, in some sense, satisfies Multiplicity. Since bodily awareness is one of the components of our overall sensory field, it too satisfies Multiplicity, albeit in a very different way than vision or audition, or so Bermúdez alleges.

Bermúdez is interested in establishing that bodily awareness is a form of self-awareness or self-consciousness. In doing so, he runs into a problem posed by Shoemaker. Recall that Shoemaker maintains that no form of self-awareness can present one to oneself 'as an object.' Shoemaker's reasoning is

as follows: if the self were presented in experience as an object, then it would be an open question whether the object that one is experiencing *is* oneself, or is some other thing. But since self-awareness is a type of awareness that grounds judgments that are immune to error through misidentification, no genuine form of self-awareness admits of this possibility. Hence, no genuine form of self-awareness can present one with oneself 'as an object.' Bermúdez's self-avowed task, then, is to show that bodily awareness is simultaneously a form of perceptual awareness—and hence object-directed—and a *bona fide* form of self-consciousness. In this section my scrutiny will be directed towards this first claim of Bermúdez's. I will first articulate Bermúdez's reason for thinking that bodily awareness is perceptual, then consider some criticisms of Bermúdez, ultimately using these points to develop my own position.

Bermúdez begins by taking on board Shoemaker's conditions on perceptual awareness. As I have formulated them they are: Object Directedness, Multiplicity, Identification, and Tracking. In other words, perceptual awareness is awareness of potentially many objects, which enables the subject to identify and track those objects. Bermúdez's strategy is to demonstrate that bodily awareness is a form of perceptual awareness by showing that it in fact does satisfy Multiplicity. Trivially, if bodily awareness satisfies Multiplicity then it satisfies Object Directedness, since if it can make one aware of many objects, it is an object directed form of awareness. Bermúdez also gives a separate argument that purports to show that bodily awareness satisfies Identification and Tracking , but I will not consider this argument.[18] My interest in Bermúdez's account concerns his reasons for thinking that Multiplicity is satisfied in the case of bodily awareness.

One route to this conclusion goes by way the phenomenon of haptic perception. In touch, we have the ability to perceive multiple distinct objects. If I hold a small metal sphere in each of my hands, I am clearly aware of two distinct objects at the same time. But in doing so, my bodily awareness is essentially implicated, for the sense of touch relies the generation of tactile sensations and proprioceptive awareness of the disposition of my body parts (O'Shaughnessy 1989; Martin 1992). One might use this constitutive connection between touch and bodily awareness—discussed in Chapter 1—as showing that bodily awareness itself satisfies Multiplicity. But as I indicated

[18]In part this because I think that it has already been successfully rebutted by other philosophers, in particular Fridland (2011) and Ávila (2017). I have little to add to their critiques of Bermúdez on this score.

at the beginning of Chapter 1, I am treating bodily awareness and touch as separate, albeit intimately related, forms of awareness. In doing so, I follow Bermúdez himself. As Bermúdez rightfully acknowledges, while it obviously true that touch satisfies Multiplicity this does nothing to show that proprioceptive awareness properly so-called satisfies Multiplicity (Bermúdez 1998, 139). It was never in question whether exteroceptive touch had this feature, and no one is claiming that exteroceptive touch is a form of self-awareness, or seriously questioning whether it is a form of perceptual awareness. So we must look elsewhere for reasons to think that bodily awareness satisfies Multiplicity.

More propitious is a line of argument Bermúdez develops that "emerges from reflection on the phenomenology of sense experience in general" (1998, 139). Bermúdez's starting point is a phenomenological observation that at first can seem quite mundane, but is actually of fundamental importance for understanding the nature of sense perception. Let me begin by first articulating a certain picture of how sensory awareness works.[19] On this view our experience of the world is, at its most basic level, always an experience in one or another modality. If this is right, then the common world that we perceive through all of these forms of awareness is some kind of construction out of the materials rendered by each of the senses taken in isolation. On such a view, each sense generates an isolated stream of experience, and the integration of these experiences is a later, non-perceptual process.[20]

Bermúdez contrasts this way of understanding the nature of sense experience with a view on which our experience of the world is, from the start, 'cross modal' (141) or multimodal.[21] On this sort of view, each of the senses is, we might say, a window onto a common world, a world populated by objects that we can see, hear, touch, taste, and smell. Adopting this view doesn't require abolishing any distinction between these different forms of awareness, but it does force us to acknowledge that there is something artificial about carving up experience into the contributions of *just* this form of awareness or that one. For instance, when I see an explosion, my awareness is of a single event that instantiates visual and auditory properties.

[19]My focus in the previous chapter on the question of individuating forms of awareness may seem to support this mistaken picture. I should say that I do not think that having a criterion for individuating senses forces this mistaken picture on us, although attention on what makes one form of awareness distinct from another is liable to suggest such a view.

[20]Alisa Mandrigin calls this sort of view *sense modalism* (Mandrigin 2018).

[21]For discussion see O'Callaghan (2015) and Vignemont (2014).

These claims concern the nature of sensory phenomenology, or how things seem to us in experience, and as a matter of sensory phenomenology, they are hard to deny. To this point, Bermúdez cites Michael Ayers approvingly:

> A judgment which links the objects of different senses may itself be, and often is, an immediate *perceptual* judgment, directly grounded on the deliverance of sense. Thus it is not normally as a result of inference, habitual association or the like (although in a few peculiar cases of disorientation some form of inference may be to the point) that I *judge* the object I feel with my hand to be the object I see. Quite simply, I *perceive* it as the same: the identity enters into the intentional content of sensation, and of my total sensory 'field.' (Ayers 1991, 187; Bermúdez 1998, 141)

Following Ayers, Bermúdez speaks of our experience presenting us with a *unified sensory field.* Now, I have some reservations about this choice of terminology, since it seems to reify the notion of a perceptual field, but there is an unproblematic way of understanding the notion that both Ayers and Bermúdez have in mind (hence Ayers' use of scare quotes around the term 'field.') On a non-ontologically committing reading, to say that there is a unified sensory field is to just say that we experience the objects and properties that we are aware of *via* distinct forms of awareness as co-habiting a single spatially unified world. To give this phenomenon a name, let's call it the *unity of sensory awareness.*

Bermúdez's central claim is that the unity of sensory awareness demonstrates that bodily awareness satisfies Multiplicity. Bermúdez's argument here turns on the notion of *egocentric space.* As he puts it, "[s]ense perception generally involves localizing what is perceived with an egocentric frame of reference centered on the perceiver's body" (1998, 142) in which "the body [...] occupies a privileged position, because objects are located relative to axes whose origin lies in the body" (142). In effect, we can think of the body as the anchor of the unified sensory field in which we experience perceived objects and properties. Since, Bermúdez reasons, bodily awareness plays a fundamental role in constituting the unified sensory field, and since the unified sensory field itself satisfies Multiplicity, bodily awareness, as a constituent of it, does as well. In other words, since bodily awareness contributes to a unified sensory field which affords awareness of multiple objects, bodily awareness itself satisfies Multiplicity and so, for that reason, can be considered a form of perceptual awareness.

3.6.2 The Flaw in Bermúdez's Argument

I'd now like to turn my attention towards some published criticism of Bermúdez's argument that I regard as fatal. Shaun Gallagher (2003, 60) Ellen Fridland (2011) and Ignacio Ávila (2017) have all identified what I take to be the fundamental flaw in Bermúdez's reasoning. Here is a passage from Gallagher stating the point plainly:

> [...] proprioception shapes sense-perceptual experience, but this is not equivalent to saying that proprioception is a form of perception or that it is a perception of multiple objects. (Gallagher 2003, 60)

And here is Ávila (quoting Fridland) elaborating on the same idea:

> The fact that bodily awareness plays a crucial role in articulating the perceptual field in which sensory modalities are structured does not mean by itself that bodily awareness—like those modalities—also meets the multiple-objects constraint. As Fridland puts it: "It seems clear that proprioception's being necessary for the perception of an object does not thereby transform that object into an object of proprioceptive awareness" (Fridland 2011, 529). (Ávila 2017, 341)

In other words, the most that Bermúdez has shown is that bodily awareness in some way structures various forms of perceptual awareness that themselves satisfy Multiplicity. But this is simply a different claim from the claim that bodily awareness itself affords us awareness of multiple objects, that is, that it satisfies Multiplicity.

Strangely, Bermúdez seems to just flatly acknowledge this point as he recognizes that bodily awareness does not, properly speaking, satisfy Multiplicity. For he notes that when bodily awareness is considered on its own, the body is the sole object of bodily awareness, which is just to concede that Multiplicity does not hold in the case of bodily awareness. Bermúdez makes much of the integration of the different sensory modalities, but the issue here is that we must make sense of both their integration and their distinctness. Vision and audition are integrated forms of awareness, after all, but it would

be an obvious mistake to conclude, on that basis, that there is no difference between them, or that they share all of the same features. But this point applies equally to bodily awareness. Showing that perceptual awareness in general, or the unified sensory field in which we perceive the world, satisfies Multiplicity does nothing to show that bodily awareness itself satisfies Multiplicity. Hence, for all that Bermúdez has argued, bodily awareness is not a form of perceptual awareness.

3.6.3 Bodily Awareness as Contrastive

Despite their criticisms of Bermúdez, Fridland and Avila end up claiming that bodily awareness is ultimately a form of perception, if a peculiar one. For instance, the view that Fridland ends up defending is one on which "proprioceptive awareness, in its most typical form, can be described as an attentively recessive, experientially transparent perceptual event of bodily feature discrimination" (2011) 539]. Similarly, Ávila sets out to defend the thesis that "bodily awareness—both recessive and attentional—is a very peculiar and unique form of perception in a structural sense" (2017, 348). Fridland primary motivation for defending Perceptualism is to "account for their interaction" (535)[22] However this is not compelling. Bodily awareness certainly interacts with perception, but this is insufficient to show that it is genuinely perceptual. Cognition influences perception but that does not show that cognition is the same thing as perceptual (Montemayor and Haladjian 2017). Ávila, meanwhile, thinks that bodily awareness is a 'peculiar' form of perception insofar at it fails to conform to the constitutive conditions on perceptual awareness laid out by Shoemaker: Object Directedness, Multiplicity, Identification, and Tracking. Indeed, he thinks that bodily awareness *never* satisfies these constraints: "there are no particular instances of bodily awareness in which the constraints of ordinary perception are satisfied" (348). However, to say that bodily awareness always fails to meet the constitutive constraints on perceptual awareness is just to say that it is not a form of perceptual

[22]She lists two other reasons as well, namely that adopting Perceptualism allows us to "apply the lessons that we learn from proprioception to the other sensory modalities" (535) and that "if we admit that proprioception is perceptual then we can retain continuity between conscious and nonconscious proprioceptions such that we are able to account for proprioceptive learning" (535), but I must say that it's not immediately obvious to me why accounting for either of these facts requires that bodily awareness be a form of perception.

awareness at all. I can therefore see no good reason to try to hold onto Perceptualism once Bermúdez's argument has been cast aside.

The view that I wish to defend is close to that defended by Shaun Gallagher. Gallagher argues "on phenomenological grounds, that proprioceptive awareness in its most typical form does not meet the identification constraint" (Gallagher 2003, 54) and so, for that reason, is not (in its typical form) a form of perceptual awareness. However, while I agree with much in Gallagher's discussion, I think he does not go far enough in pressing against the Perceptualist orthodoxy. For as his caveat implies, Gallagher does think that certain acts of bodily awareness—those that are attended to by the subject—are genuine instances of perception. He says:

> It is possible, however, to transform proprioception into an attentive reflective awareness in which I "involute" my attention to some particular part of my body. I can attend, for example, without vision or any other sense except proprioception, to the position or movement of my foot. (55)

Gallagher does not really elaborate on why this act of attention should 'transmute' something non-perceptual into something perceptual. The most that he says that when one actively attends to the body in bodily awareness one in some sense 'picks it out' or 'identifies' (56) it and in that way contrasts it with other objects. But picking out or identifying something in thought is not the same the thing as picking out or identifying something in perception. One makes one's body 'an object' in this sense by making it the intentional object of one's intention to direct one's attention a certain way. But that does not show that the underlying form of awareness is itself of the perceptual kind, and indeed there remain good reasons for thinking that it is not.

What it would take to show that bodily awareness is ever a form of perceptual awareness is that it satisfies Multiplicity.[23] However, the fact that we can attend to our bodies in bodily awareness does nothing to show that we can be aware of objects other than our own body in bodily awareness, and so such a consideration could not possibly demonstrate that bodily awareness is ever a form of perceptual awareness. The only way to do that is to show that bodily awareness itself makes us aware of non-bodily objects, a claim that Gallagher would reject since he holds that "[i]f proprioception has an

[23]Gallagher would accept this since he accepts Shoemaker's constitutive conditions on perceptual awareness. See page 54.

object, its object would be, by definition, the body" (57). Hence, I think that Gallagher is simply wrong to hold that bodily awareness is ever a form of perceptual awareness. Indeed, that claim undermines the central point of Gallagher's paper, which is to emphasize the crucial differences between bodily awareness and perceptual awareness. Hence I want to break with even Gallagher and hold that bodily awareness is not a form of perceptual awareness in *any* sense, though in doing so I aim to vindicate the spirit of Gallagher's essay.[24]

The point that I wish to press is that Bermúdez fails to recognize the implications of a fundamental contrast in sense experience between the way objects are presented in perception and the way the body is presented in bodily awareness. Recall that Bermúdez's motivation for treating bodily awareness as a form of perception is that it plays a role in structuring our unified sensory field. But Bermúdez makes a mistake in concluding that since both bodily awareness and perceptual awareness contribute to our unified sensory field, they do so in the same sort of way. In fact the body as given in bodily awareness plays a fundamentally different role in constructing our unified sensory field than do our exteroceptive senses themselves. Recall the points from the last chapter about the role of the notion of perspective in perceptual awareness. In perceptual awareness, perceived objects and qualities are always perceived as standing in some relation to the perceiver's body or some part of it, which is another way of saying that perceptual experience is perspectival in character. Objects are seen in relation to the eyes, heard in relation to the head, felt in relation to the skin, smelled in relation to the nose, and tasted in relation to the tongue and mouth. So in each of these forms of awareness, the body plays a structuring role as the origin or implicit reference point in every act of perceptual awareness (Zahavi 2003, 98–99).

As I noted in the previous chapter (citing Bermúdez in doing so), bodily awareness itself lacks these sort of relational or perspectival structure, and necessarily so. Here is Shaun Gallagher putting the point nicely:

> If one accepts the premise that sense perception of the world is spatially organized by an implicit reference to our bodily position, the awareness that is the basis for that implicit reference cannot

[24]It should be noted that the contrast between bodily awareness and paradigmatic instances of perception has been a theme of the phenomenological tradition from its inception. See for instance Merleau-Ponty (2013).

> be based on perceptual awareness without the threat of infinite regress. (Gallagher 2003, 61)

In other words, once one accepts that the body is the origin of our perceptual faculties and so an implicit reference point in them, holding that bodily awareness itself has a perceptual structure looks like an absurdity. To hold that bodily awareness is a form of perceptual awareness would be to hold that in bodily awareness one's own body is presented in contrast to or as distinct from one's own body. Merleau-Ponty, in a passage cited by Bermúdez (62), points out the difficulty in such a model: "I observe external objects with my body, I handle them, inspect them, and walk around them. But when it comes to my body, I never observe it itself. I would need a second body to be able to do so, which would itself be unobservable" (Merleau-Ponty 2013, 93). Strictly speaking, Merleau-Ponty should say that I never perceptually observe my body *in bodily awareness*, for I do observe it in sight, touch, etc., and in those senses there is a 'second body' or at least a second body *part* implicated. When I see my hand, for instance, I see it as distinct and distant from my eyes; when I touch my knee, the part I am touching and the part I am touching with are distinct (Merleau-Ponty 2013, 95). The point is rather that not all forms of conscious awareness can be this way, on pain of regress. If *every* form of sensory awareness presented our bodies to us in the way that forms of perceptual awareness do namely as standing in some relation to some other part of our body, then we would require an infinite series of bodily perspectives.

The fact that bodily awareness is a non-perspectival form of awareness cuts straight through this regress, dissolving it. In bodily awareness, one is simply aware of certain body parts and bodily features. They are simply *here*, where I am, or at least where some part of me is. Here is A.D. Smith:

> Perception concerns the "external world." The suggestion is that this is, in essential part, because perceptual experience presents such "external" objects as literally external—to our bodies. A bodily sensation such as a headache is experienced as in your head; it is not perceived as an object with your head. (Smith 2002, 134)

A crucial feature of this way of understanding the relationship between 'inner' bodily awareness and 'outer' perceptual awareness is that they are contrastive

and complementary forms of awareness. This emerges most clearly with the sense of touch, since the external boundary—the skin—simply is the organ of touch. But since all of our perceptual organs are located in the external surface of the body, versions of this point apply to all of them.

The contrast between the body as given in bodily awareness also emerges from careful reflection on the phenomenology of bodily awareness itself. As M.G.F. Martin has emphasized, bodily awareness presents our body to us a bounded volume existing in a larger space (Martin 1995, 271). In other words, bodily awareness itself involves an implicit awareness of the world in which one exists. In an example Martin uses he asks to imagine stretching one's arms out (Martin 1993, 212). In doing so, one is aware that they are some distance from one another in a larger space that they could be moved through. In this way, bodily awareness, though it involves no awareness of this larger external space itself, nevertheless points outwards to it, if only implicitly, as standing in contrast to what one can be aware of in bodily awareness, namely one's own body (Martin 1995). Hence not only does perception point inward, towards the body, but bodily awareness points outward, towards the external world. In this way, perceptual awareness and bodily awareness are structurally interrelated in a very specific sense: perception's perspectival structure is determined by the location of perceptual organs on the body and bodily awareness' structure as a bounded volume is determined by there being an external world beyond the surface of the skin.

Both of these elements—perceptual and bodily awareness—contribute to our unified sensory field, just as Bermúdez emphasizes. But they do so in very different ways, and make very different contributions to it: bodily awareness provides us with the anchor point of that sensory field, while perception expands it beyond the subject's boundaries, out into the world. They contrast with one another in virtue of their different structural features: perceptual awareness is perspectival, indeed body-centered, while bodily awareness is not. At the same time, they complement one another. At the most basic level, perceptual experience depends in various ways on bodily awareness. Perceptual awareness generally involves some type of bodily movement, which itself implicates bodily awareness (Smith 2002, 140). And at an even more basic level, bodily awareness gives one a sense of *what* the origin of perceptual awareness is. Moreover, we have already seen that information is pervasively shared between the bodily senses and the outer senses, a fact which makes perfect given their mutual role in informing the subject about the physical properties of the world she inhabits. So in insisting that bodily

awareness and perceptual awareness are distinct in kind, I do not want to give any suggestion that they are unrelated. To the contrary, the nature of perceptual awareness is bound up with bodily awareness, and *vice versa.* But rather than showing that they are the same kind of thing, this fact entails that they are not.

To summarize, I have held in this section that bodily awareness shares certain key features with bodily awareness, namely that it satisfies Object Directedness, but that it is nevertheless an essentially different form of conscious awareness. I have argued that the difference consists in a fundamental contrast between the two types of awareness: perceptual awareness always involves an implicit reference to one's body, while bodily awareness simply presents one with one's body. This structural difference, in turn, explains the essential epistemic difference between perceptual awareness and bodily awareness, namely that the latter, but not the former, is a first-personal form of awareness. After all, since's one's own body is the sole object of bodily awareness, one can never misidentify it when one has bodily awareness of it. The view that emerges here is one of bodily awareness as a kind of intermediary between perceptual awareness and introspective awareness. This is fitting insofar as the body as it manifests in bodily awareness serves the nexus between the subject's mind and the larger world. When the external world affects me, it does so via my sense organs, and when I affect the external world, I do so using my body. In the final section of the chapter I explore these ideas as a way of showing why my discussion matters for our understanding of the nature of bodily awareness.

3.6.4 Why It Matters

Why does it matter whether we treat bodily awareness as an atypical form of perceptual awareness or as a distinct form of conscious awareness? The primary reason is that the tendency to regard bodily awareness as a form of perception—even an abnormal one—tends to obscure other crucial features of bodily awareness and raise spurious puzzles, puzzles that can be sidestepped if only we resist this impulse. For instance, in treating bodily awareness as a form of perception one naturally distances the subject from her body by making it seem like just another part of the 'external' world.[25]

[25]See Hyman (2003) for a version of this point as it applies to awareness of bodily sensations such as pain.

Now of course in one sense the body is a part of the 'external world' since it a physical object like anything else. But the point is that it does not show up in bodily awareness in just the same manner as other physical objects. As Maurice Merleau-Ponty points out, there a number of respects in which our body is a unique object of conscious awareness. It is, for instance, inescapable (Merleau-Ponty 2013, 93). It is also the sole object under one's direct volitional control (O'Shaughnessy 1980).

One of the key points that philosophers like O'Shaughnessy emphasize is that bodily awareness is closely integrated with our capacity for bodily action. Now, perceptual awareness is obviously integrated with our capacity for bodily action as well, but the two kinds of awareness relate to action in very different ways. Perception, we might say, supplies us with awareness of the *target* of our action, or information about the layout of the physical environment that we inhabit. Bodily awareness, on the other hand, supplies us with awareness of the body itself, which is the means by which we act in the world. Since the body is the unique object that one has volitional control over, one's awareness of it would appear to differ in kind from type of awareness one has of every other object. If our body itself were presented to us in bodily awareness as just another worldly target of action, one would seemingly have to posit some additional, prior intentional act in order to move it. But when we consider what it is like to perform an action such as reaching for a coffee mug we do not find any purely 'inner' non-bodily action that takes our body itself as its intentional object (Ford 2016). There thus appears to be a categorical difference between how one's body manifests itself in bodily awareness and how worldly objects appear in perception, a difference that is bound up with the fact that bodily awareness affords immediate control of the body in willed action.

These facts suggest that the distinction between bodily awareness and perception is not a mere terminological or taxonomic quibble, but in fact marks a fundamental difference in the roles these two types of mental state play in our cognitive economy. Beyond their roles in action, these two types of awareness also have very different connections to first-personal thought. As we shall see in the following chapter, bodily awareness always involves an accompanying *feeling of bodily ownership.* Much discussed in recent work on bodily awareness, this feeling distinguishes bodily awareness from perceptual awareness. The basic phenomenon picked out by the notion of a feeling or sense of bodily ownership is that in bodily awareness it invariably seems to one that what one is aware of is one's body or some part or feature of it. It is

this phenomenological feature of bodily awareness that accounts for its first-personal character. Only because bodily awareness inevitably presents our bodies to us as our own does it rationalize the self-ascription of what one is aware of in it. Extending these lessons, the cognitive role of bodily awareness is, in general, quite different from the cognitive role of perceptual awareness. Not only do they relate to our capacity for bodily agency in different ways but, as we have seen, they also relate to first-personal thought in different ways. All of this makes sense in light of the differences in how we relate to our bodies as opposed to all of the other objects in the physical world.

The fundamental objection to the sort of view I am proposing is based on the principle of explanatory parsimony. Doesn't it just simplify matters to have as few types of mental states as possible in one's theory of the mind? It is true that one does not want to multiply theoretical notions *unnecessarily*, but the underlying question is always whether it is necessary to posit an additional theoretical notion. With bodily awareness, I think the case is clear. The differences between bodily awareness and perception and introspection are so profound that bodily awareness can only be classified as a species of either by means of increasingly *ad hoc* stipulations. While simplicity is a theoretical virtue, so is drawing sharp lines between different things. Classifying bodily awareness as an atypical form of perception or introspection fails to do this, and so limits rather than expands our understanding of our experiential relationship to our bodies. The fundamental purpose of any theoretical enterprise is gaining understanding, and I contend that treating bodily awareness as a distinct form of conscious awareness allows us to best understand the nature of the phenomenon, and in fact sheds light on both perception and introspection themselves by articulating the ways that bodily awareness relates to these other mental phenomena.

Chapter 4

The Feeling of Bodily Ownership

4.1 Introduction

In the previous two chapters I have argued that bodily awareness is a unified form of awareness with a distinctive set of structural features that cannot be reduced to either perceptual or introspective awareness. In this chapter I take up a topic that I broached in the last one: the fact that bodily awareness is *first-personal*, in the sense that it portrays our body to us as our own.[1] Bodily awareness, I have noted, involves a distinctive sense that what one is aware of in it is one's own body or some part of it. In recent work, philosophers and psychologists have called this a *sense* or *feeling of bodily ownership*, a term that derives from Martin (1995). Here I investigate the nature of this feeling of bodily ownership through the lens afforded by psychiatric and neurological disorders that appear to affect it. In doing so, I develop a novel account of why bodily awareness involves a feeling of ownership, one which illustrates an important connection between the awareness of our bodies that we exhibit in bodily awareness and the awareness of our minds that we exhibit in introspection.

In certain rare and startling neurological and psychiatric conditions, what is ordinarily most intimate and familiar to us—our own body—can seem alien. For instance, subjects with *somatoparaphrenia* delusionally misat-

[1] A version of this chapter is forthcoming in *Philosophy and Phenomenological Research.*

tribute their body parts to others:

> [...] in response to a query concerning her left hand, [the subject] said, 'That's someone's hand, someone forgot it—that's funny, you read in the paper about people losing purses but not a hand' [...] (Weinstein et al. 1954, 47)

Similarly, *depersonalized* subjects sometimes report feeling detached from their bodies:

> I do not feel I have a body. When I look down I see my legs and body but it feels as if it was not there. When I move I see the movements as I move, but I am not there with the movements. (Sierra 2009, 28)

Since these cases concern the apparent loss of our feeling of bodily ownership—the distinctive sense subjects have of their bodies as their own—call them *ownership disorders.*

It is hard to understand the experiential situation of these subjects. What would it be like to experience one's body without experiencing it as one's own? Unsurprisingly, subjects affected by these disorders struggle to make sense of their condition:

> Examiner: "Is this your hand?"
>
> Patient: "Not mine, doctor."
>
> Examiner: "Yes it is. Look at that ring; whose is it?"
>
> Patient: "That's my ring, you've got my ring, doctor"
>
> Examiner: "No I have not. It's your hand. Look how different it is from mine." (Patient bewildered, felt her left shoulder, her left upper arm and follows downward to the wrist. Then she said: "It must be my hand.")
>
> Examiner: "And do you still say there is nothing wrong with it?"
>
> Patient: "It seems I am wrong." (Sandifer 1946, 123)

As theorists, one of our primary tasks is to give voice to these subjects by making sense of these conditions.

In addition to their intrinsic interest, ownership disorders also bear on questions of philosophical significance. One use to which they are put is as part of a 'phenomenal contrast argument' for the existence of a feeling of bodily ownership (Siegel 2010; Vignemont 2018, 14). In this style of argument "one describes a situation in which there is intuitively a phenomenal contrast between two experiences" (14-5) positing a difference in high-level phenomenal content to account for the difference. Here the suggestion is that the difference between normal subjects and subjects suffering from ownership disorders consists in an absent feeling of ownership. Ownership disorders also appear to reveal something surprising about bodily awareness, our awareness of our bodies 'from the inside.' Ordinarily, there is no question that the body you are aware of in bodily awareness is your own. If you have proprioceptive awareness of an arm, experience a pain in a foot, or feel upside down, you thereby have proprioceptive awareness of *your* arm, experience a pain in *your* foot, feel that *you* are upside down. In this way, bodily awareness contrasts with exteroception: if you see a body in a funhouse mirror, it may be your own, but it could easily be someone else's. This fact about bodily awareness seems to be reflected in its phenomenology. Since bodily awareness is always awareness of one's own body, bodily awareness seems to necessarily involve a feeling of ownership: if one is aware of some body part x or bodily feature F in bodily awareness, then one experiences x or F as belonging to one's body. Call this thesis *Sufficiency*, since it says that bodily awareness suffices for a feeling of bodily ownership.

Ownership disorders appear to be counterexamples to Sufficiency. As Frederique de Vignemont claims, "some patients suffering from [somatoparaphrenia] feel their own limb as alien, despite having tactile sensations in the 'alien' limb" (2007, 427). If this is right, then an important connection between bodily awareness and certain judgments made on its basis is severed. For we routinely make first-personal judgments on the basis of bodily awareness, claims such as *My legs are crossed*, *My hand hurts* or *I'm upside down.* Such statements appear to be immune to errors of misidentification when they are made in this way, since it does not seem possible for me to be mistaken about whose body I am feeling in bodily awareness. But ownership disorders seem to raise this very possibility, thereby robbing these

self-ascriptive judgments of that immunity.[2] Since such immunity is a hallmark of genuinely first-personal judgments, the liability of such judgments to errors of misidentification appears to show that they are not genuinely first-personal after all.

In this chapter I defend Sufficiency from the threat posed by ownership disorders. Since Sufficiency appears to conflict with with a face-value interpretation of ownership disorders, the burden is on me to explain away the apparent tension. To do so, I identify and correct the fundamental mistake in the extant literature on the feeling of bodily ownership, namely its tendency to treat the feeling of bodily ownership as a single psychological construct. Instead, I distinguish the feeling of *minimal ownership*, or the first-personal character of bodily awareness, from the feeling of *affective ownership*, or the distinctive type of affective concern we have for our bodies. I motivate this distinction by raising the *disownership puzzle*, the fact that fact subjects suffering from ownership disorders display an ambiguous set of symptoms. In §4.2, I introduce some basic terms. In §4.3, I characterize two central ownership disorders, somatoparaphrenia and depersonalization. In §4.4, I articulate Sufficiency and lay out the *standard interpretation* of ownership disorders on which they constitute counterexamples to Sufficiency. In §4.5 I discuss the relationship between Sufficiency and first-personal thought, employing Sydney Shoemaker's notion of *immunity to error through misidentification.* In §4.6 I raise the disownership puzzle. In §4.7 I respond to the disownership puzzle by distinguishing minimal ownership and affective ownership, outlining my account of each and distinguishing them from other proposals in the literature.

4.2 Groundwork

[2]Frederique de Vignmont (Vignemont 2012) labels such errors *false negatives*, cases wherein subjects fail to identify some part or feature of their body *as* a part or feature of their body. These contrast with *false positives*, cases wherein subjects identify a part or feature of some *other* body as a part or feature of their own. One might argue that only false positives constitute genuine counterexamples to the immunity thesis. However, what is central to first-personal forms of awareness is that they are *identification free* (Evans 1982, 180). False negatives, as much as false positives, made solely on the basis of a form of awareness A, demonstrate that A has an identification component which can break down. Since the absence of such an identificatory element is what is distinctive of first-personal forms of awareness, any identificatory error suffices to show that A is not a genuinely first-personal mode of awareness. I discuss these issues in more detail in §4.5.

By *bodily awareness* I mean the distinctive mode of awareness each person has of their body 'from the inside.' Examples include proprioceptive and kinesthetic awareness of the disposition and movement of one's body parts, awareness of located bodily sensations such as pains and itches, and the vestibular sense of balance and orientation. For my purposes, what unites these phenomena into a single mode off awareness is the fact that one has a unified experience of one's body as instantiating these different features. What I am relying on is the idea that we have a distinctive type of experience of our bodies which has proprioceptive, kinesthetic, sensational, and vestibular aspects. For instance, when you pick up a hot coffee mug, you experience tactile, thermal, and nociceptive sensations in your hand, which you also have proprioceptive and kinesthetic awareness of. These features are bound together, and the mode in which they are bound together is what I am calling 'bodily awareness.' Though these components of bodily awareness are subserved by distinct sensory systems, they are nevertheless integrated in our ordinary experience.[3]

A substantive claim I am making is that awareness of pains and other bodily sensations is an aspect of bodily awareness. In feeling a pain or other bodily sensation, one feels it in a particular body part, and one thereby feels that body part. Properly speaking, what one experiences is pain-in-a-body-part, to adopt a convention of Brian O'Shaughnessy's (1980). This conflicts with the standard view on which pains are mental states and pain awareness is introspective in character (Shoemaker 1994b; Aydede 2017). A fuller defense of this commitment is provided in Chapter 4. However, I would cite the considerations just adduced in favor of this view: when you pick up a hot coffee mug, the pains and other sensations that you feel in your hand are partly constitutive of your awareness of it. If you completely anesthetized your hand, you would thereby lose awareness of it. Proprioception, kinesthesia, and our awareness of pains and other sensations are thus bound up together, in the sense that bodily awareness co-presents body parts and the bodily sensations that we feel in them.

To say that there is a *feeling* or *sense of bodily ownership* is to say that when one is aware of some body part or bodily feature in bodily awareness,

[3]For information about these sensory systems see e.g. Kandel et al. (2013). For a pioneering investigation of the phenomenology of bodily awareness, see Merleau-Ponty (2013). For more recent work see O'Shaughnessy (1980; 1989), Martin (1992; 1995) and Bermúdez (1998).

one is aware of it as one's own body part or bodily feature.[4] Since the purpose of this chapter is to clarify what the feeling of bodily ownership consists in, I will leave my characterization of it rough for the moment. However, two clarifications are important to make up front. First, we should not assume that talk of a feeling of bodily ownership necessarily identifies a single phenomenon. We posit a feeling of bodily ownership largely to account for the reports of subjects suffering from ownership disorders.[5] But, as we shall see, ownership disorders and complex and messy, and these verbal reports require careful interpretation. We cannot simply assume that all subjects who speak of 'disowning' a body part are reporting on the very same thing. Second, despite what the terminology might suggest, we should not assume that bodily ownership denotes a *feeling*, that is, a distinctive quality or *quale* of ownership. I return to this issue in §4.7.

4.3 Ownership Disorders

The feeling of bodily ownership is an elusive target. Because it pervades our experience of our body, it is hard to find any trace of. Since it is present whenever we feel a bodily sensation, become proprioceptively aware of our limbs, or attend to our balance, we—like Hume searching after the self—can never seem to catch ahold of any distinctive feeling of ownership. For this reason, disorders of bodily ownership provide an important perspective.[6] By examining cases in which the feeling of bodily ownership breaks down, we can hope to understand what it consists in. In this section, I describe two ownership disorders, somatoparaphrenia and depersonalization.

4.3.1 Somatoparaphenia

Somatoparaphrenia (or *asomatognosia*) is the delusional belief that some part of one's own body—typically a limb on the left side of the body—is not in fact a part of one's own body. The condition often manifests as the delusion that

[4]See Martin (1995), de Vignemont (2007), Tsakiris (2011), Vignemont and Alsmith (2017), and Bermúdez (2018d). For historical context, see Simmons (2017), Chamberlain (2018b) and Chamberlain (2018a).

[5]See Chadha (2017) for criticism of this inference.

[6]The same is true of *illusions* of bodily ownership such as Rubber Hand Illusion (Botvinick and Cohen 1998), which I am setting aside for reasons of space.

the limb belongs to another person, such as the attending physician, or even someone not currently present. There are even cases in which the subject regards the limb as some other kind of object entirely, as with a patient who claimed that her left arm was a '1clumsy cat who is always breaking things." (Paulig et al. 2000).[7] Several of the quotes in the introduction provide a vivid illustration of the condition.

In their survey, Vallar and Ronchi (2009) reviewed 56 cases of somatoparaphrenia reported in the literature. They found that somatoparaphrenia is typically caused by damage to right hemisphere, often in posterior regions in or near the parietal, occipital, and temporal lobes and the insular cortex. Subjects suffering from somatoparaphrenia invariably have some kind of sensory, motor, or attentional deficit concerning the affected limb, although no single deficit appears to be either a necessary or sufficient condition on somatoparaphrenia. Typically, a somatoparephrenic subject will suffer from *hemiplegia*, or paralysis in affected half of their body (the one contralateral to the lesion site), as well as *anosagnosia* (Nathanson, Bergman, and Gordon 1952), or denial of illness, in particular *anosognosia for hemiplegia*, or the delusional or confabulatory denial of such paralysis, as well as *hemi-neglect* (Dooneief and Mayeux 1989), or an attentional deficit concerning half of space. Most somatoparaphrenic subjects also suffer from sensory deficits to touch and other somatic stimuli, although in rare cases some capacity for sensory awareness remains (Bottini et al. 2002).

4.3.2 Depersonalization

Depersonalization is a psychiatric disorder whose characteristic symptom is a sense of detachment from aspects of one's own psychology or physiology (Sierra et al. 2005; Simeon et al. 2008). The DSM-5 characterizes depersonalization as involving:

> Experiences of unreality, detachment, or being an outside observer with respect to one's thoughts, feelings, sensations, body, or actions (e.g., perceptual alterations, distorted sense of time, unreal or absent self, emotional and/or physical numbing) ("Dissociative Disorders" 2013).

[7] Translation provided by Sven Neth and Mathias Boehm .

Unlike somatoparaphrenia, depersonalization is not a delusion. Subjects suffering from depersonalization fully recognize that the thoughts, feelings, sensations, and actions present to their minds are their own. What they say is more subtle, namely that the affected states do not feel like they belong to them. At the extreme, some depersonalized subjects suffer from *illeism*, the disinclination to use the first-person pronoun at all (Billon 2017a, 741). One patient says:

> I feel some degree of 'out of it' all of the time, but it has almost become to be what I am used to now. I get times when I feel very out of my body. I am looking at people, know who they are, but can't place myself there. I remember events from the past, but don't always see 'me' there [. . .] Looking in the mirror proves difficult as I don't always recognize the person looking back at me. (Sierra (2009), 27)

As this passage suggests, a complaint of detachment from one's own body, including bodily actions and sensations, is a characteristic symptom of depersonalization. Indeed, both Sierra et al. (2005) and Simeon et al. (2008) identify reports of alienation from one's body ('Body feels as if it didn't belong to self'; 'Feeling detached from bodily pain') as common symptoms in large scale surveys of depersonalized subjects.

4.4 Sufficiency

Ownership disorders bear on fundamental questions about the nature and epistemic role of bodily awareness. In particular, ownership disorders appear to refute *Sufficiency:*

Sufficiency: Necessarily, if one is aware of some object x or property instance F via bodily awareness, one experiences x or F as a part or feature of one's own body.[8]

[8]For articulations of this claim, see O'Shaughnessy (1980) Vol. 1, 162, Ayers (1991), 287-8, Martin (1995), Brewer (1995), Cassam (1997), Ch. 4., and Gallagher (2005), 105-6. Arguably John Locke (1975, II.XXVII.17) is a historical antecedent.

Ownership disorders bear on Sufficiency only because they are ostensible cases of awareness without ownership: cases in which a subject retains some bodily awareness of a body part but does not have a sense of ownership regarding it. A very different kind of case is one in which a subject reports a loss of felt ownership over some body part as a result of losing awareness of it. Jonathan Cole's patient I.W. presents us with one such case (Cole 1991; Cole 2016).[9] Owing to a rare infection which targeted his afferent mechanoreceptive fibers, I.W. lost all proprioceptive and tactile awareness below his neck. Upon waking, I.W. reported that it felt to him as if he had no body. But unlike in the aforementioned ownership disorders, it is easy to make sense of I.W.'s claims: lacking any awareness of his body whatsoever, it did not feel to him as if he had one. However, such cases do little to illuminate the relationship between bodily awareness and the feeling of ownership, since in them both are absent.

Many researchers interpret ownership disorders as involving awareness without ownership and therefore take them to refute Sufficiency. Regarding somatoparaphrenia, Frederique de Vignemont says:

> It may seem as if it was nonsensical to ask whether you are sure that this is your own body. The body that you feel is necessarily your own body. However, this does not imply that you necessarily experience the body that you feel as your own. Indeed, some patients suffering from [somatoparaphrenia] feel their own limb as alien, despite having tactile sensations in the 'alien' limb. (2007, 427)

Regarding depersonalization, Alexandre Billon claims:

> The problem with [depersonalized] patients' bodily sensations seems to be in fact a problem of the sense of ownership for sensations—the awareness of one's sensations as one's own—rather than of awareness proper. When the patient says he does not feel sensations in his back, for example, the problem seems to be that although he feels these sensations, he does not feel them as his… (2017b, 427)

[9] A caveat: I.W. did retain the ability to feel pain and temperature, and so didn't lack *all* bodily awareness, but the point stands: I.W.'s claims are readily explicable by his deficits in bodily awareness.

Similarly, Lane and Liang (2011) allege that in cases of somatoparaphrenia 'patients represent experienced sensations as belonging to someone other than self' (79).

These philosophers claim that awareness of body parts and features—including sensations, which I am treating as bodily states—comes apart from a sense of ownership, at least in aberrative cases. Call this the *standard interpretation* of ownership disorders.

We should distinguish two different ways one might use ownership disorders to argue for the standard interpretation. On one approach, ownership disorders are straightforward counterexamples to Sufficiency. That is, we take the subjective reports at face value and reject Sufficiency on this basis. This line of argument is not as convincing as it might first appear. A sublimated assumption is that these verbal reports mirror the content of the underlying experiences that they are based on. But that is not obvious. Actually understanding these verbal reports in the light of these complex psychiatric and neurological disorders is itself a difficult undertaking. On a more sophisticated style of argument, the hypothesis that these subjects lack a feeling of ownership defeasibly provides the *best explanation* for why the subjects make these reports. But that is a contentious claim, and I will go on to argue in §4.6 that is not true.

4.5 Sufficiency and Self-Awareness

At this point it is worth exploring in more detail what hinges on the truth of Sufficiency. In his influential discussion of immunity to error through misidentification (IEM), Sydney Shoemaker (1968) identifies a connection between genuinely first-personal judgments and the epistemic grounds on which they are based.[10] Shoemaker contends that there are certain predicates which "can be known to be instantiated in such a way that knowing [them] to be instantiated in that way is equivalent to knowing [them] to be instantiated in oneself" (1968, 565). This fact, Shoemaker claims, is the basis of our capacity for first-personal thought. Introspective awareness of the contents

[10]For more recent work on IEM, see Pryor (1999) and the essays collected in Prosser and Recanati (2012), especially Vignemont (2012). For a defense of the claim that bodily awareness grounds judgments that are IEM see Morgan (2019). For a critical voice on bodily IEM, see Chen (2009).

of our own minds is an example of such a way of knowing. If one applies certain mental predicates, for instance *is thinking* ϕ, solely on the basis of introspective awareness, one is bound to judge *I'm thinking* ϕ. One cannot find oneself in the position of having introspective awareness that *someone* is thinking ϕ and yet be uncertain as to *who* is thinking ϕ, since one cannot have introspective awareness of the contents of another person's mind.

In *The Varieties of Reference* (1982), Gareth Evans extends these ideas to certain judgments made on the basis of bodily awareness:

> None of the following utterances appears to make sense when the first component expresses knowledge gained [via bodily awareness]: 'Someone's legs are crossed, but is it my legs that are crossed?'; 'Someone is hot and sticky, but is it I who am hot and sticky?'; 'Someone is being pushed, but is it I who am being pushed?' There just does not appear to be a gap between the subject's having information (or appearing to have information) in the appropriate way, that F is instantiated, and his having information (or appearing to have information) that he is F; for him to have, or appear to have, the information that the property is instantiated just is for it to appear to him that he is F. (220-1)

Evans' claim is that bodily awareness, like introspection, has the property that Shoemaker identifies as essential to first-personal thought: awareness of the instantiation of some property in this mode is *eo ipso* awareness of its instantiation in or by oneself.[11] If this is so, then bodily awareness is apt to ground first-personal thought about one's bodily features. Depending on how close one thinks that the connection is between first-personal thought and self-consciousness, such a claim could establish that bodily awareness is a form of self-consciousness, providing what Evans grandiosely calls "the most powerful antidote to a Cartesian conception of the self" (220).

If Sufficiency is false, then it is possible to have awareness of some body part or feature in bodily awareness, and yet for it not to seem to one as if

[11]The mere fact that some mode of awareness grounds *some* judgments that have the immunity property does not suffice to show that the mode of awareness is first-personal. Evans, for instance, held that visual demonstrative judgments have the immunity property, yet it is not true that in seeing something, one invariably sees oneself. A mode of awareness is genuinely first-personal just in case it provides warrant for judgments of the form $\exists x Fx$ *only* in virtue of providing warrant for the judgment *I'm F.*

that body part or feature is one's own. But if this is possible, then judgments made on the basis of bodily awareness admit of errors of misidentification: it is possible for a subject to know, on the basis of bodily awareness, that *someone's* body is some way without knowing that *their* body is that way.[12] If it is right to draw a constitutive connection between first-personal thought and immunity from these types of errors of misidentification, then the falsity of Sufficiency demonstrates that bodily awareness is not apt to ground distinctively first-personal thought in the way that introspection is. Hence the status of Sufficiency lies at the heart of some of most important philosophical questions one can ask about bodily awareness.

4.6 The Disownership Puzzle

In this section I raise and address a puzzle for the standard interpretation of ownership disorders. The issue is that subjects affected by ownership disorders display symptoms which are puzzling, even inexplicable, on the standard interpretation.[13] In particular, even subjects in the grip of severe ownership disorders such as somatoparaphrenia and depersonalization continue to display symptoms which indicate that they retain a sense of ownership over their affected body parts. For instance, in spite of their reported lack of any ownership feelings, depersonalized subjects continue to self-ascribe their body parts on the basis of their bodily awareness of them. Similarly, somatoparaphrenic subjects who retain the ability to feel pain in their disowned limb react to that pain in normal ways, suggesting that they still experience it as their own. What we find with these subjects is not complete alienation from their bodies, but rather a complex and ambiguous set of symptoms, some of which suggest a lack of felt ownership, others of which suggest a maintained feeling of ownership. I call this tension in the symptoms of ownership disor-

[12]Some hold that the relevant kind of immunity is only *contingent*, e.g. Vignemont (2012), 226 and Gallagher (2003), 67. But if a mode of awareness 'guarantees' immunity only contingently, it does not really guarantee it at all. Many argue that bodily awareness cannot ground judgments that are absolutely IEM due to the possibility of *crossed wire* (Evans 1982, 221) and *body swap* (Shoemaker 1963) cases. Full consideration of these challenges is beyond the scope of this chapter, but see Salje (2017) for recent discussion.

[13]See Gallagher and Zahavi (2012), 179-182 and 233-5, Zahavi (2005), 143-4 and Stephens and Graham (2000), 8 for similar points regarding ownership of actions and thoughts.

ders the *disownership puzzle.* In the remainder of this section I elaborate on the disownership puzzle and argue that resolving it requires bifurcating the notion of a sense or feeling of ownership into at least two components. In the following section I advance an account of what those components are.

An adequate explanation of ownership disorders must make sense of all of their features. Understandably, the most striking features of ownership disorders have received the most attention, namely the subjective reports of a lack of felt ownership. However, such verbal reports must be interpreted carefully.[14] In certain cases, reports about cognitive deficits can be taken at face value. For instance, a subjective report that someone has lost the ability to see color (*achromotopsia*) can be taken at face value, since ordinary subjects are competent users of color concepts. But there is no ordinary concept of a feeling of bodily ownership, making it much less clear what subjects who report a loss of a feeling of bodily ownership are saying. A completely neutral characterization of what is going on in these cases is that something about the subject's experience of their body (or some part of it) has changed, and that the subject finds it natural to characterize this change by invoking notions such as *disownership* and *alienation.* But these reports are themselves data to be explained, not explanations of the data.

Rather than being a folk concept, the notion of a sense or feeling of bodily ownership is instead a theoretical one, introduced by philosophers and psychologists to explain certain data. In particular, the feeling of bodily ownership is invoked to explain at least three phenomena:

1. *The first-personal character of bodily awareness.* The fact that bodily awareness grounds first-personal judgments and affords basic intentional actions.

2. *Ownership disorders.* The reports of subjects suffering from ownership disorders who complain of a lack of felt ownership over or alienation from their bodies.

3. *Illusions of bodily ownership.* The reports of subjects suffering from illusions such as the Rubber Hand Illusion (Botvinick and Cohen 1998), who report that it feels to them as if a foreign object is part of their body.

[14]See Wayne Wu's forthcoming paper (n.d.) for similar methodological worries, although in service of an elimantivism about ownership feelings that I reject.

Regarding the first phenomenon, researchers invoke a feeling of ownership to account for the connection, discussed in §4.5, between bodily awareness and the first-person. Here, for instance, is Alexandre Billon:

> As I use the term, the sense of bodily ownership is the awareness of our limbs and bodily parts as our own. The sense of bodily ownership is the kind of awareness reflected in standard first-personal judgments of ownership, such as "this is my hand". (Billon 2017b, 191)

Regarding the second, we have seen that researchers posit a feeling of bodily ownership in order to explain what goes missing in ownership disorders. Regarding the third, Manos Tsakiris characterizes the Rubber Hand Illusion as "an experimental paradigm that allows the controlled manipulation of body ownership" Tsakiris (2011).

As the term is generally used, one and the same construct—*the* feeling of bodily ownership—is supposed to account for all of these phenomena. This point is explicitly drawn out by de Vignemont:

> [The feeling of bodily ownership] is a useful simple explanatory tool, which allows for a single unified explanation of ownership illusions, for phenomenological differences between sensations in one's limbs and in tools, and for disownership pathologies. There is something it is like to experience parts of one's body as one's own, some kind of non-conceptual intuitive awareness of ownership. (2013, 650)

While a unified account of these phenomena would have the virtue of simplicity, it is not the only possibility. It is also possible that the first-personal character of bodily awareness requires one explanation, ownership disorders another, and illusions of bodily ownership still a third. If that were so then there would, strictly speaking, be no single feeling of bodily ownership, no one psychological construct playing the three roles characterized above. Instead, we might speak of a multiplicity of ownership feelings, or even reject the notion entirely. In the remainder of this section I will argue that ownership disorders give us reason to distinguish two sorts of ownership feelings, a finding that has important ramifications for debates about the feeling of bodily ownership.

Consider subjects suffering from depersonalization. Despite their reports of alienation from their bodies, depersonalized subjects generally continue to self-ascribe their body parts and bodily sensations on the basis of their awareness of them. As we have just seen, the connection between bodily awareness and bodily self-ascription is one of the reasons for positing a feeling of bodily ownership in the first place. Since depersonalized subjects make the same sorts of first-personal judgments ('My arm hurts'; 'You're touching my leg') on the same grounds (their bodily awareness of them) as ordinary subjects, there is equal reason for ascribing a feeling of bodily ownership to them. In rare cases depersonalized subjects avoid using the first-person pronoun altogether, referring to themselves or their bodies in the third person. But even here, subjects tend to vacillate between the first- and third-person:

> it is strange that she can feel pain, says one of her patients about herself, as she is not anything anymore, her arms and legs walk on their own because she does not exist (…) I lose the idea of myself (Janet 1903, quoted by Billon (2017a), 741)

In short, even in the most extreme cases of depersonalization, the subjects' capacity for making first-personal judgments on the basis of bodily awareness appears to be intact.[15]

Further evidence that depersonalized subjects continue to experience their bodies as their own is provided by their unimpaired capacity for bodily agency. Consider the subject who said "walking up the stairs, I see my legs and hear footsteps and feel the muscles but it feels as if I have no body; I am not there" (Sierra 2009, 28). As Billon notes, these types of reports led early researchers to suppose that depersonalized subjects really were anesthetized, but "clinical examinations generally revealed no sensory alteration whatsoever" (2017b, 201). Other studies have revealed that depersonalized subjects are indistinguishable from controls in tests of bodily movement (Cappon and Banks 1965). If the bodies of depersonalized subjects really felt like foreign objects to them, then their unimpaired capacity for bodily agency is hard to make sense of. Bodily action is a paradigmatically first-personal phenomenon. As Lucy O'Brien puts it, "[one's] awareness, with respect to

[15]It is crucial to distinguish between the *capacity* to make certain judgments on certain grounds and the subject actually making such judgments. What is in dispute here is whether subjects have appropriate experiential grounds for making these judgments, whether or not they in fact do so.

physical action, is necessarily awareness of one's body, and further it is necessarily awareness as of one's own body" (217). In short, bodily agency grounds a sense of ownership. If depersonalized subjects lacked this feeling ownership over their bodily movements, one would expect some sort of impairment in the use of their bodies. But there is no evidence to support this hypothesis, suggesting that even depersonalized subjects have first-personal awareness of their bodies.

It is even harder to draw clear lessons from somatoparaphrenia. First, the condition inevitably involves severe sensory and agentive deficits which at least partly explain the strange subjective reports characteristic of the condition, complicating its use as a counterexample to Sufficiency (Wu, n.d.). Recall that Sufficiency says that bodily awareness is necessarily accompanied by a feeling of bodily ownership. However, most somatoparaphrenic subjects have lost all awareness of their disowned limbs. For this reason, they cannot serve as counterexamples as Sufficiency. A second problem for the use of somatoparaphrenia as a counterexample to Sufficiency is that somatoparaphrenia is a delusion. It is generally accepted that delusions are doxastic states, beliefs or something like them (Bayne and Pacherie 2005). But Sufficiency is a claim about what the subject experiences, not about what she believes. Hence somatoparaphrenia doesn't even have the right shape to constitute a counterexample to Sufficieny. In response, one might argue that subjects form these delusions in response to their strange experiences (Vignemont 2013, 649). But even if this is so, one gets the right result only if one supposes that the content of the delusional belief ('This is not my hand') matches the content of aberrative experience which causes it. But there is no compelling reason to believe this. At least as plausible is the idea that the hand simply feels strange to them in light of the sensory deficits affecting it, and that they hit upon the delusional description for some other reason. After all, somatoparaphrenic subjects do not just say that the limb is not their own, but that it is their niece's or that it is a cat, etc. Yet no one supposes that there is a distinctive feeling of one's arm being one's niece's or a cat.

Finally, what little bodily awareness that somatoparaphrenic subjects retain belies an intact sense of ownership. For instance, somatoparaphrenic subjects with the ability to feel pain in the limb continue to react to it in ways that indicate that they are aware of it as their own: they wince, grimace, and generally wish for the pain to stop. Consider the patient reported by Maravita (2008) who regards his arm as a foreign object and suggests that

he "ask [his] wife, from time to time, to remove this left arm and put it in the cupboard for a few hours in order to have some relief from pain" (102). What is notable here is not the oddity of the request, but the fact that the subject still locates the pain in his arm and desires it to stop. Insofar as this subject is able to feel anything in his disowned limb, he responds to it in appropriate ways, at least relative to his delusional belief regarding it.

Having emphasized what is maintained in subjects suffering from ownership disorders, I do not mean to lose sight of what has gone missing. These subjects experience a deep sense of alienation from their bodies, and any adequate account of these phenomena must explain this fact. The lesson is just that this severe impairment in the subject's sense of bodily ownership is present alongside other capacities which suggest a retained sense of ownership. Each of these phenomena is equally deserving the label of a 'feeling of ownership' since each partly fits the characterization of the feeling of bodily ownership that one standardly finds in the literature. For this reason, the natural response is to bifurcate the notion of a feeling of bodily ownership into (at least) two components, one which is intact even in subjects suffering from ownership disorders, and one whose impairment constitutes the ownership disorder. While other explanations are possible, this is the minimal revision one can make to the notion of a feeling of ownership while respecting all of the evidence. It is true that in bifurcating the feeling of bodily ownership we lose out on the simplicity of a unitary account. However, simplicity is only an explanatory virtue when all other things are equal and here they are not. The lesson of the ownership puzzle is that subjects afflicted by ownership disorders retain first-personal awareness of their bodies, while, at the same time, feeling alienated from them. This calls for a distinction in ownership feelings.

4.7 Varieties of Ownership Feelings

I have just argued that careful reflection on the symptoms of ownership disorders gives us reason to bifurcate the notion of a feeling of bodily ownership. One phenomenon which is picked out by that label is what I have called first-personal awareness, and this appears to be intact even in paradigmatic ownership disorders such as depersonalization and somatoparaphrenia. Insofar as subjects with these disorders retain any awareness of their bodies

at all, they continue to react to them in ways that are unmistakably first-personal: they self-ascribe them (when rational), act with them (when not paralyzed), and react in normal ways to bodily sensations that they feel in them (wince, seek relief, etc.) Since such first-personal awareness is part of the job description of the feeling of bodily ownership, these subjects can truly be said to possess a feeling of bodily ownership. Let us give the label of a feeling of *minimal ownership* to the first-personal aspect of bodily awareness. In this section, I will put forth a hypothesis about what minimal ownership consists in, and show how my account improves upon existing proposals.

At the same time, ownership disorders constitute profound disturbances in the psychological lives of the subjects that they afflict. Depersonalization can be a harrowing experience:

> This sounds mad but I am am not me. I look in the mirror and I don't see me. I don't know who it is that I see and I don't know where the real me has gone. Logically that cannot be the case, but that is how it feels. I spend all day checking myself and it's never me. I panic and try to solve where I am. I feel so depressed, like I can't go on living this way but I live in hope that one day I will wake up and it will be me. (Baker et al. 2003, 432–3)

Other ownership disorders such as Body Integrity Identity Disorder (BIID) also have a powerful emotional component. Subjects with BIID strongly desire the amputation of one or more limb, to the point of obsession (Blom, Hennekam, and Denys 2012). When they cannot convince a doctor to perform the operation, they will often take matters into their own hands, risking their lives in the process. Clearly these conditions involve a severe disruption in the subject's affective relationship to their bodies. Hence, I will tentatively label what has gone missing in subjects with ownership disorders a feeling of *affective ownership*, and provide an account of it by likening it to the feeling of familiarity invoked in discussions of Capgras delusion.

4.7.1 Minimal Ownership

In the last section I argued that, initial appearances to the contrary, ownership disorders do nothing to undermine Sufficiency, the idea that bodily awareness necessarily involves a feeling of bodily ownership. In particular, I claimed that even subjects in the grip of the most severe ownership

disorders—somatoparaphrenia and depersonalization—continue to display first-personal awareness of their bodies, insofar as they retain any awareness of them at all. I call this aspect of bodily awareness 'minimal ownership', and in this section I characterize the notion in depth and situate it with respect to other proposals in the literature. I begin by distinguishing my view from existing *eliminative*, *inflationary*, and *deflationary* proposals and then provide a positive *functionalist* account of minimal ownership, drawing on an analogy between bodily awareness and introspection.

Eliminative or cognitive views of bodily ownership deny that there is a distinctive *feeling* of bodily ownership, holding instead that talk of a 'feeling of bodily ownership' refers to cognitive attitudes (beliefs or belief-like states) that bear an indirect relationship to the subject's experience of their bodies. Adrian Alsmith, for instance, defends a 'cognitive' account of ownership, distinguishing it from 'phenomenal' accounts on which "[t]here is a phenomenal property O in virtue of which a subject experiences something as [their] own" (2015, 884). On a cognitive account "one experiences something as one's own only if one thinks of something as one's own" (881), so that there is no feeling of ownership beyond thinking that something belongs to one. In a forthcoming paper, Wayne Wu defends a similar view. Wu thinks that talk of a 'feeling of ownership' is like talk of (say) 'feeling past one's prime:' it's a verbal articulation of how one is feeling in a certain circumstance, but it should not be read as literally conveying the content of one's experience. Just as there is no distinctive feeling, no single quality or *quale*, of being past one's prime, there is no distinctive feeling of bodily ownership either. Instead, bodily ownership is a cognitive phenomenon, a set of judgments or beliefs concerning the body grounded in our experience of it.

My reason for rejecting eliminative/cognitive accounts is that I think attributing first-personal content to bodily awareness provides the simplest and best explanation of a wide range of phenomena. Consider two competing proposals, one on which the content of bodily awareness is *de se* and one on which it is not. We can schematically represent the former as '*my a* is *F*' and the latter as '*a* is *F*' where *a* is some body part and *F* is some bodily feature. The question is which way of representing the content of bodily awareness is most explanatory. If it is the former, then we have reason for positing what I am calling a feeling of minimal ownership. If it is the latter, then we don't. I hold that attributing *de se* content to bodily awareness explains why bodily awareness necessarily grounds first-personal judgments, affords bodily action, and rationalizes our responses to bodily sensations such as pains and itches.

If bodily awareness of an arm is necessarily bodily awareness of *my* arm, then it is easy to see the rational connection between that experience and saying 'This is my arm', using that arm to pick up a coffee mug, or wincing when that arm is hurt. By contrast, if bodily awareness lacks such *de se* content, these connections immediately become mysterious. Of course, other explanations of these phenomena are possible, but attributing *de se* content—the feeling of minimal ownership—to bodily awareness is a straightforward explanation that has no obvious costs.

Inflationary accounts of the feeling of bodily ownership hold that the feeling of bodily ownership is an additional feeling or quality present in bodily awareness, distinct from sensations of touch, pain, itch, and so on. On the inflationary view, when one is touching a table then in addition to 'sensations of resistance, texture and temperature, as well as the sensation of the hand location where the pressure occurs' (Vignemont 2013, 643), one also has a distinctive feeling of the hand as one's own. Alexandre Billon's *primitivist* view is of this type (2017b). Billon argues that depersonalization shows that one can lack a feeling of ownership over one's body even if all other aspects of bodily awareness are intact. From this he concludes that the feeling of ownership must be some primitive quality over and above those involved in proprioception, kinesthesia, the bodily sensations, etc., a basic quality that doesn't play any essential role in the self-ascription of body parts, bodily action, pain experience, and so on.

Critics such as Bermudez complain that such proposals are unexplanatory, trading in "unverifiable claims about phenomenology" (2018c). The objection I want to press is that such proposals fail to explain how or why there is a type of ownership feeling which is completely inalienable. A primitive quality of bodily awareness, by its very specification, can go missing while every other aspect of bodily awareness remains intact. Subjects with congenital anesthesia, for instance, lack the ability to feel pain but have otherwise unimpaired bodily awareness. The content of bodily awareness on the inflationist view can be schematically represented as 'x is F and G' where x is a body part, G is the feeling of ownership and F is some other bodily feature. Since F and G are separate qualities, one could have an experience of a body part as F but not G (Martin 1995, 270) The problem with this proposal is that we have seen no reason for thinking that the feeling of minimal ownership is detachable in this way. The cases cited in favor of this claim turn out, on reflection, not to substantiate it. That is because whenever subjects have any awareness of a body part or bodily feature, they

behave in ways that reflect their awareness of that body part or feature as their own. Since the inflationist holds that the feeling of bodily ownership is just another detachable bodily sensation like pain and itch, they are in no position to explain this fact.

Finally, I turn to *reductive* or *deflationary* accounts such as those provided by M.G.F. Martin (1995) and Jose Luis Bermudez (Bermúdez 2018b). According to the deflationist, the feeling of bodily ownership exists, but is reducible to some other aspect of bodily awareness. For instance, both Martin and Bermudez defend *spatial* accounts of the feeling of bodily ownership, identifying it with the unique spatial character of bodily awareness. For instance, Martin says that "for me to feel as if some part of my body occupies a region of space through having bodily sensation is for it to seem to me as if that region falls within one of the boundaries of my body" (1995, 270). On this proposal, bodily awareness has a contrastive character: it delimits a space within which bodily sensations can occur—what one feels to be one's body—and a larger space that one cannot experience sensations in—the external world within which that smaller space is embedded. The contrast between regions in which one can and one cannot experience bodily sensations marks the felt confines of the body, and hence accounts for our 'sense of bodily ownership.'

My objection to this sort of proposal is that it fails to explain the first-personal character of bodily awareness. There is no apparent reason why awareness of items as falling within a spatial region or volume with a certain structure should rationally warrant the self-ascription of those items.[16] Represented schematically, the content of bodily awareness for the deflationist is something like 'x is F in R' where x is a bodily region, F is a bodily feature, and R is the bodily field, a spatial volume possessing certain structural features. For instance, on Bermudez's recent account the structure of the bodily field is given by the following principles:

Boundedness: Bodily events are experienced within the experienced body (a circumscribed body-shaped volume whose boundaries define the limits of the self).

Connectedness: The spatial location of a bodily event is experienced relative to the disposition of the body as a whole. (Bermúdez 2018b, 211–4)

[16]See Serrahima (2019) for a similar point.

On this view, when one feels a pain in one's hand, one feels it within a certain body shaped volume (Boundedness) and relative to the disposition of the rest of that volume (Connectedness). But if that's all there is to the content of bodily awareness, it is fair to ask: *what's that got to do with me?*[17] In other words, why does awareness of a certain item, say a pain, in a certain body-shaped spatial volume justify me in self-ascribing that pain? Strictly speaking, the content of bodily awareness on this proposal is just that there is a pain in a body part, and that this body part belongs to a volume with a certain shape. Missing from this story is any explanation of how or why I am justified in taking this volume to be *myself*, or why I am justified in taking the things I experience in it to be parts or features *of me.* There is thus a justificatory gap between what is given in experience—objects and features arrayed in space—and what one is in a position to judge on the basis of such experience—that those objects and features belong to one.

I have just argued that eliminative, inflationary, and deflationary views cannot account for what I am calling the feeling of minimal ownership. To recap, I part ways with the eliminativist in that I hold that the feeling of minimal ownership is part of the phenomenal character of bodily awareness. I part ways with the inflationist in that I deny that the feeling of minimal ownership is detachable from the exercise of bodily awareness. And I part ways from the deflationist in that I deny that the feeling of minimal ownership can be reduced to any other aspect of bodily awareness such as its spatial character. It is fair to ask, though, what this feeling of minimal ownership is. In the remainder of this section I spell out the notion, characterizing the feeling of minimal ownership in broadly functional terms, drawing on an analogy with our felt ownership of thoughts and other mental states in introspective awareness.

When one is aware of one's thoughts, experiences, or other occurrent psychological states in introspection, one is aware of them as one's own thoughts, experiences, etc. So like bodily awareness, introspection also generates a sense of ownership over what one is aware of in it. Moreover, like bodily awareness introspection licenses judgments that are immune to error through misidentification. This is because it is simply not possible for a thought other

[17]In fact Bermudez augments this account with two other principles defining two distance relations in the bodily field, but these additional principles do nothing to address my objection.

than my own to token a judgment such as *this is my thought* in the normal way. The acts of thinking, feeling, perceiving, etc. and the capacity to form introspective judgments such as *I'm thinking*, *I'm feeling*, *I'm perceiving*, etc. are integrated in such a way that the former—and only the former—can ordinarily generate the latter. In this way, the first-personal character of introspection is explained by its distinctive role in our cognitive economy. We can say that the capacity for making first-personal judgments concerning one's occurrent psychological states is *functionally integrated* with the occurrence of those states, and that it is this functional integration which confers immunity to error through misidentification to such judgments and which thereby accounts for their first-personal character.

To connect this back up to the feeling of ownership, it is useful to invoke the distinction between mere awareness of oneself and awareness of oneself *as* oneself (Cassam 1997, Ch. 1). Only with the latter do we have a phenomenon deserving of the label 'self-awareness'. Now, if anything is to count as genuine self-awareness, it is introspection. For introspection to present our occurrent mental states to us as our own would involve it having the form 'i am F' rather than 'a is F' where 'i' is a mental analogue of first-person pronoun 'I', a is an arbitrary object, and F is the predicate 'is thinking ϕ.' Bringing this point together with the point from last paragraph, on this proposal the feeling of mental ownership consists in the fact that introspective awareness is necessarily *de se*, a fact which is grounded in the functional integration of introspective awareness with certain first-personal capacities, in particular the capacity to make first-personal judgments such as 'I'm thinking ϕ.' This is an example of what I am calling a functionalist account of the feeling of ownership, though here in the case of mental ownership.

My account of the feeling of minimal ownership in bodily awareness proceeds along similar lines. Just as introspective awareness connects up with certain first-personal capacities, so does bodily awareness. Bodily awareness of a body part or state is poised to token the self-ascription of that part or state and enable action with it. Awareness of a pain in a body part is integrated with motivation, withdrawal reflexes, protective dispositions, etc. Bodily awareness is invariably first-personal, on this view, because of its function, what it does for the organism. On the view I favor, bodily awareness has a *de se* content with the schematic form 'my x is F' where x denotes some body part, F denotes some bodily feature, and 'my' denotes a non-

conceptual analog of the first-person pronoun.[18] Awareness of the body that lacked such *de se* content would be comparatively useless. Mere awareness that *some* arms are crossed or that *some* pain exists would not rationalize appropriate actions in such a direct way. One would need to go through some further step to establish that the body part, pain, etc. was in fact one's own. But such steps would be time-consuming and introduce the possibility of errors of misidentification. Better for one's awareness of one's own body to directly control relevant first-personal capacities. I call this functionalist account because it looks to the role that bodily awareness plays in our cognitive economy to account for the feeling of minimal ownership.

This account explains all of the features of the feeling of minimal ownership which distinguish it from other proposals in the literatures. As I have characterized it, the feeling of minimal ownership is just the *de se* content of bodily awareness. For this reason, it is part of the phenomenal character of bodily awareness. Because it has its source in the functional integration of bodily awareness with certain first-personal capacities, we also have an explanation of why the feeling of minimal ownership is non-detachable, namely that anything that counts as bodily awareness is going to have this functional role. Finally, the account differs from deflationist accounts in that it does not seek to deflate or reduce the notion of feeling of bodily ownership to some other aspect of bodily awareness. In refusing to do so, accounts for the first-personal character of bodily awareness in a way that deflationist accounts cannot. For these reasons, I maintain that minimal ownership is the idea we are after when we are seeking to understand the first-personal character of bodily awareness.

4.7.2 Affective Ownership

I have just provided an account of minimal ownership, or the first-personal character of bodily awareness. But what first drew our attention to ownership disorders is what goes missing in them: our felt familiarity with our body. In this section, I put forward a hypothesis about the nature of this impairment, drawing on research on related disorders such as Capgras delusion. I posit that a deficit in *affective ownership*, a kind of affective phenomenology which grounds the distinctive concern each of us has for our own body, explains

[18]The feeling of minimal ownership is thus an instance of the *non-conceptual first-person* (Bermúdez 1998; Peacocke 2014).

the subjective reports made by subjects with ownership disorders.[19] Before I proceed, a note of caution: I have already drawn attention to the fact that ownership disorders are complex, and hence that no unified account of them is likely. I am thus not putting forth this deficit in affective ownership as an exhaustive explanation of all symptoms of all ownership disorders.

A striking feature of ownership disorders is that they involve some kind of affective or emotional deficit. For instance, subjects suffering from somatoparaphrenia sometimes display antipathy towards the affected limb, a condition called *misoplegia* (Loetscher, Regard, and Brugger 2006). One such patient would "[talk] to her left leg as to another person; [she would call] it names, cursing it and sometimes even beating it" (2006, 1099). Somatoparaphrenic subjects also fail to display ordinary affective responses to threatening stimuli directed towards the limb. Romano et al. (2014) showed that somatoparaphrenic subjects display diminished anticipatory skin conductance response (SCR) to threatening stimuli. SCR is indicative of arousal of the autonomic nervous system (Armel and Ramachandran 2003, 2) which is itself implicated in emotional processing (Levenson 2014), suggesting that the subject's emotional sensitivity to threats to the limb is impaired. And as we have seen, subjects suffering from depersonalization complain of severe feelings of alienation from their bodies and psychological states. These facts suggest that an affective disruption is at the heart of these ownership disorders.

The way that affective ownership shows up in experience is illustrated by research on related disorders such as Capgras delusion. In Capgras delusion, patients complain that someone known to them—a spouse or family member generally—has been replaced by an imposter (Capgras and Rebould-Lechaux 1923; Weinstein 1996). One patient, studied by Brighetti and colleagues, locked her father out of the house and called the police on him, saying "there was an impostor outside the house who was picking the lock and pretending to be her father" (Brighetti et al. 2007, 191). There is now significant evidence that the delusion has its basis in a flattened affective response to the visual appearance of loved ones. A number of researchers have found that subjects suffering from Capgras delusion show a diminished skin conductance response to persons whom they harbor the delusion towards (e.g. Ellis et al. 1997; Hirstein and Ramachandran 1997; Ellis et al. 2000), suggesting

[19] I distinguish my account of minimal ownership from Frederique de Vignemont's recent 'Bodyguard hypothesis' (2018) at the end of this section.

a flattened autonomic response to familiar faces. On this hypothesis, "the Capgras patient has an experience of seeing a face that looks just like a close relative (usually the spouse), but without the affective response that would normally be an integral part of that experience" (Davies et al. 2001, 140). In short, the Capgras patient can *see* that the face looks like that of her father, she cannot *feel* that it is the face of her father.

If this is right, then it is natural to think that the delusions of somatoparaphrenic subjects have a similar grounding in a missing affective response. As de Vignemont puts it, citing the work of Feinberg and Roane, "somatoparaphrenia should be viewed as a kind of Capgras delusion for one's body parts" (2018, 192). Of course, as de Vignemont notes, the type of affective feeling involved in seeing a loved one is of a different character than the type of affective feeling involved in our experiences of our own body. The key similarity, however, is that both types of experience possess a distinctive affective character, and that impairment of this affective character creates the specific psychological deficits that we find. Just as a visual feeling of grounds our ability to react to our loved ones in appropriate ways, say to greet them warmly, affective ownership grounds our ability to react to our body in appropriate ways, say to prevent it from being harmed and to protect it.

Evidence for this hypothesis comes from neurophysiological research on ownership disorders. As I noted, Romano et al. (2014), have found that subjects with somatoparaphrenia show diminished skin conductance responses towards stimuli threatening the disowned body parts. As they put it "[o]ur data suggest that patients affected by disrupted ownership for contralesional limbs show a reduced monitoring of incoming threatening stimuli when these stimuli are directed towards the affected body part" (1221). This research group also found that subjects with Body Integrity Identity Disorder (BIID), another ownership disorder, show diminished SCRs to stimuli approaching (though not contacting) their alienated limbs (Romano et al. 2015). In the case of depersonalization, there is similar evidence of a deficit in low-level affective response. Dewe, Watson, and Braithwaite (2016) found that "[i]ndividuals predisposed to depersonalisation/derealisation" (377) showed diminished skin conductance responses to apparently threatening stimuli. Since such diminished SCRs are indicative of a diminished affective response to stimuli, these studies substantiate the hypothesis that the sense of alienation that these subjects feel towards their bodies has a grounding in an absence of affective ownership.

It is illustrative to compare my account of affective ownership with Fred-

erique de Vignemont's recent *Bodyguard Hypothesis* (n.d.; 2018) which also looks to a deficit in the affective dimension of experience to explain ownership disorders. She identifies the feeling of ownership with a 'narcissistic' feeling of one's body having 'a special import for the self' (194) which is grounded in the operation of the *protective body map*, a special type of body representation which controls our protective behaviors. Our views differ in that I do not tie the feeling of affective ownership to the operation of any such body map. This is a good thing since the condition of *pain asymbolia* appears to refute the Bodyguard Hypothesis. Subjects with pain asymbolia retain the capacity to feel bodily and self-ascribe bodily pain, but they lack any desire to be rid it and do not engage in protective beheaviors to avoid pain (Grahek 2012). Pain asymbolia can be used in an argument against the Bodyguard Hypothesis:

1. According to the Bodyguard Hypothesis, what it is for something to be experienced as belonging to one's body is for it to be represented in the protective body map.

2. The pains of subjects suffering from pain asymbolia are not represented in the protective body map.

3. So subjects suffering from pain asymbolia do not have any felt ownership over the pains that they feel.

The problem is that the conclusion is false: pain asymbolics *do* retain ownership of the pains that they feel. Hence it is not true that 'only the protective body map can ground the sense of bodily ownership' (167). By contrast, my own view straightforwardly accounts for pain asymbolia. The pains of asymbolic subjects still involve a feeling of minimal ownership, which explains their capacity to self-ascribe them, but lack a feeling of affective ownership, which explains why they are unbothered by them.[20]

[20]In her book, de Vignemeont responds to this objection, but her response is unconvincing. She notes that asymbolics *do* display affective responses to painful stimuli, but that these responses are valenced in the opposite direction: the asymbolic laughs at pain and offers her hand for further experiment rather than cringing and pulling it away. But this does not help. The Bodyguard Hypothesis claims that that a feeling of ownership is specifically grounded in the *protective* body map, and so the fact that subjects are disposed to behave in *other* ways does not save it.

4.8 Conclusion

My goal in this chapter has been to investigate the feeling of bodily ownership. I have done so through examining ownership disorders and the ramifications they have for the study of bodily awareness. I used the thesis of Sufficiency as a means of doing so, because of its connections to the immunity of bodily self-ascriptions to certain types of error, and consequently, its connections to the claim that bodily awareness is a genuinely first-personal form of awareness. I have argued that, properly understood, ownership disorders do not constitute counterexamples to Sufficiency, and so cannot be used to undermine the claim that bodily awareness is genuinely first-personal, though that claim may still be questioned on other grounds. I distinguished between two very different types of bodily ownership, minimal ownership and affective ownership, arguing that a failure to draw this distinction affects extant discussions. I have used my positive account of minimal ownership to resolve a recalcitrant dispute between deflationists and inflationists about the feeling of bodily ownership. And I have used my account of affective ownership to explain the puzzling symptoms of ownership disorders, with which we began this chapter. In doing so, I have fleshed out a way in which bodily awareness is distinct from perception and like introspection: it is inherently first-personal.

Chapter 5

The Paradox of Pain

5.1 Introduction

In the previous chapters my focus has largely been on the 'objective' aspects of bodily awareness: the way in which bodily awareness serves to make us aware of our body *qua* physical object. But bodily awareness also affords awareness of bodily sensations, which appear to be 'subjective' or 'mind-dependent' phenomena. Hence an adequate account of bodily awareness must squarely face the challenge posed by the bodily sensations. In this chapter I take on the challenge by showing how to integrate the phenomenon of bodily pain (and thereby the bodily sensations in general) into my account of bodily awareness.

Is pain in the body or in the mind? If you pinch yourself hard enough in your arm, you will feel a pain there. Taken at face value, this experience suggests that the pain you feel is located in your arm, right where you pinched it. Call this idea *Location:*

Location: In a typical pain experience, a subject s feels a pain P in a region R of their body (*Awareness*) and P is located in R (*Existence*).[1]

The appeal of Location is obvious. When we feel a burning pain in our ankle, our focus is directed towards our ankle because that is where we experience it.

[1]The 'ordinary' hedge excludes atypical cases phantom limb pain, referred pain, and other pain disorders. I discuss phantom limb pain and referred pain in §5.3.1.

At the same time, pains also share a number of features with conscious mental states. For instance, pains appear to be mind-dependent, and the subject who feels a pain knows about it in a way that no other subject can, a fact which puts her in a better epistemic position than others regarding it. We can collect these claims in *Subjectivity:*

Subjectivity: Necessarily, if some pain P exists, then there is some subject s such that s feels P (*Mind-Dependence*), s has some way w of knowing about P that no other subject has (*Privacy*) and w confers to s privileged epistemic access to P (*Privilege*).

Again, the appeal of Subjectivity is obvious. We simply do not entertain the possibility of unfelt pains, and we defer to subjects regarding own their pains.[2] Indeed, these claims are part of the *International Association for the Study of Pain's* definition of pain, which states that "[p]ain is always subjective' and that '[i]f [subjects] regard their experience as pain […] it should be accepted as pain" (Loeser 2011).

In these materials some philosophers find a paradox lurking. For instance, Valerie Hardcastle claims that "from a folk conception, we end up with a very strange and probably inconsistent view of pain" (2015, 531). Why? Because we both "want to locate pains in the region of disturbed tissue" (532) and yet we conceive of pain as "private, subjective, and incorrigible" (532). Similarly, Christopher Hill thinks that it "is literally impossible to have a single, internally coherent theory of the nature of pain" (2009, 189) since he alleges both that "the folk concept of pain refers to bodily occurrences" (188) and that it refers to a mental state, in particular our "somatosensory representations of bodily disturbances" (187). This so-called *paradox of pain* is the idea that our ordinary conception of pain is incoherent, split between a bodily conception of pain, characterized by Location, and a mental conception of pain, characterized by Subjectivity.[3] Since, the argument goes, pain cannot be both a state of an arm or a leg and a state of the mind—pain cannot be both in the body and 'in the mind'—our ordinary conception of pain is

[2]Which is not to deny that subjects may have *unattended* pains, pains they are not currently paying attention to.

[3]For recent discussion, see Murat Aydede (2005; 2009a; 2009b), Valerie Hardcastle (2015), Christopher Hill (2005; 2009), Ganson and Ganson (2010) Alex Byrne (2011), Emma Borg and co-authors (2019), Olivier Massin (2017) Kevin Reuter (2011; 2017) and co-authors (2014), and Hyo-eun Kim et al. (2016).

incoherent, and so must be revised or even eliminated outright. As Murat Aydede says, "[t]his paradox is one of the main reasons why philosophers are especially interested in pain" (2009b).

In this chapter, I argue that the appearance of paradox here is illusory. Simply put, Location and Subjectivity are not inconsistent principles: there is no barrier to simultaneously accepting both of them, that is, holding that pains are mind-dependent entities that are literally located in the body parts in which they are felt. The real challenge comes in seeing how these principles can be reconciled, and why they seem to so many philosophers to stand in conflict when they do not. I take these tasks in reverse order. I begin by identifying an underlying assumption common to those who press the paradox of pain. This assumption is *Objectivism*, the thesis what one feels in one's body when is in pain is a something objective or mind-independent, such as tissue damage or nociceptor activation. I show that Location, Subjectivity, and Objectivity form an inconsistent triad, but argue that this does nothing to undermine the coherence of the concept of pain, since Objectivism is not an element of it. Instead, this contradiction provides us with a strong reason to reject Objectivism itself. Since Objectivism is an element of popular Perceptualist and Representationalist views, this result has wide-ranging implications for contemporary philosophical discussions of pain.

The remaining challenge is to show how Location and Subjectivity can be reconciled. Though the principles as formulated may not jointly entail any contradiction, many philosophers nevertheless feel that they stand in some sort of tension. To address this concern, I develop the *Embodied View* of pain, a novel metaphysical account on which bodily pain is a constitutively mind-dependent property instantiated by part of the subject's body. A key claim of the Embodied View is that there is a distinction between a subject's *feeling pain* and a body part's *hurting* or *having a pain in it.* The former is a mental state of the subject herself, namely an act of awareness which attributes pain to a body part; the latter is the painful sensible quality which is attributed in such experiences. What is distinctive of the Embodied View is the connection that it posits between these two states: roughly, a body part has a pain of a certain character located in it just in case the subject whose body part it is feels a pain of that character in that body part. On this view, pains are located in body parts in virtue of being features of them, in the same way that a color is located on the surface of red rose or a dent is located in a car door. However, pain differs from these other properties in virtue of being a *mind-dependent* feature, one whose instantiation in a body

part depends on the subject's awareness of it.

In §5.2 I formulate the 'paradox of pain' as an inconsistent triad comprising Location, Subjectivity, and Objectivism, and argue that the issue is straightforwardly resolved by rejecting Objectivism. In §5.3 I develop the Embodied View and show how it accounts for a number of otherwise-puzzling features of bodily pain. In §5.4 I fend off several objections to it, and in §5.5 conclude with some broader lessons.

5.2 The Paradox of Pain

As we have seen, a number of philosophers claim that the notion of bodily pain harbors an internal incoherence or contradiction. The issue is supposed to be that thinking about bodily pain inclines us both towards a bodily conception of pain, characterized by Location, and a mental conception of pain, characterized by Subjectivity. However, this cannot be the whole story for, to put it simply, Location and Subjectivity do not together entail any contradiction.[4] Now, one might already suspect that the way that I have formulated these principles leaves out something crucial. For in the brief quotes I provided, Hardcastle speaks of a 'region of disturbed tissue' and Hill speaks of 'bodily occurrences', while Location and Subjectivity as I have formulated them do not mention tissue damage, disturbances, injury, or anything of the kind. Figuring out what Hardcastle and Hill mean by these phrases will thus be the key to understanding why bodily pain strikes them as paradoxical. However, far from substantiating the allegation that the concept of pain is paradoxical, the real lesson will be that paradox derives not from the concept of pain itself, but rather from the imposition of a loaded metaphysical assumption—Objectivism—on it. Hence the true upshot of the 'paradox of pain' is that this widely accepted philosophical thesis ought to be rejected, and a different account of pain's nature put in its place.

Here is Objectivism:

Objectivism: In virtue of being in pain, a subject s feels something, x, in some bodily region R, and x is identical to some objective feature O.

[4] I leave the exercise of not deriving a contradiction from those principles up to the reader.

Objectivism comprises two claims, one phenomenological, one metaphysical. The phenomenological claim is the unobjectionable idea that when one is in pain one feels something in some part of one's body, a claim which is also a component of Location. The metaphysical claim is that what one feels in one's body is an objective property, for instance tissue damage or nociceptor activation. As I am using the term, to call a property *objective* is to say that no instantiations of it *constitutively depend* on an act or state of mind, where to say that x constitutively depends on y is to say that x depends for its existence or occurrence on y in virtue of its essence or nature as the kind of thing it is.[5] By this criterion, instances of tissue damage or nociceptor activation are objective, since an act or state of mind is not constitutive of physical injury or cell activation.

The role that Objectivism is playing in the formulation of the paradox of pain can be seen in Hardcastle's claim that the experience of pain is an "inner perception that is keyed to some event or series of events objectively taking place in our bodies" (531) and in Hill's claim that "what one is aware of when one is aware of a pain is a bodily disturbance" (180), where for Hill a 'bodily disturbance' is some objective condition of a body part. Objectivism, it is worth noting, is a widely adopted thesis in philosophical discussions of bodily pain. Adherents include David Armstrong (1962; 1968), George Pitcher (1970), James Cornman (1977), George Graham and G. Lynn Stephens (1985), Natika Newton (1989), Michael Tye (1995a; 1995b; 2002; 2005a; 2005b; 2015), David Bain (2003; 2007), and Brian Cutter (2011; 2014) as well as most other perceptualists and representationalists. Not all of these philosophers would agree with the idea that the ordinary conception of pain is inherently contradictory or paradoxical, but as I shall now show, anyone who accepts Objectivism must reject either Location or Subjectivity.

The argument that Objectivism, Location, and Subjectivity form an inconsistent triad is straightforward: by Objectivism, what one feels in one's body when one is in pain is some objective property O. But now either O

[5]For this notion, see Kit Fine (1995, 276). The claim of *constitutive* dependence is crucial. An entity may *causally* depend on some mental act or state without it being of a type which is mind-dependent in any interesting sense. Adapting an example of M.G.F. Martin's (personal communication), one could rig up a device that made it such that if one stops looking at a building, it is destroyed. With such a contrivance in place, there is a sense in which the building depends for its existence on a mental state, but this is not the sense which interests us: it is not part of the essence or nature of buildings to so depend.

= pain, or $O \neq$ pain. Suppose that $O =$ pain. If so, then we must reject Subjectivity. Why? Well, by Mind-Dependence, no pain can exist unfelt. But objective properties, by nature, can exist without being felt. So if $O =$ pain, then we must reject Subjectivity. Suppose, then, that $O \neq$ pain. Then, given the assumption that a subject feels only one type of thing in their body in virtue of being in pain, we must reject Location. Why? By Awareness, what one feels in one's body when one is in pain simply is pain. But by Objectivism, the thing that one feels in one's body in virtue of being in pain is O. Since we are assuming Objectivism and supposing that $O \neq$ pain, this requires rejecting Location. Hence acceptance of Objectivism entails the rejection of either Location or Subjectivity. So either Location, Subjectivity, or Objectivism must be given up if one is to have a consistent view of pain.

This result is bad for Objectivism. If the Objectivist takes the first horn and identifies pains with instances of O, they must accept a number of absurd results. For instance, if pains just are instances of O, then a pain exists any time O is instantiated. An injured cadaver or a nociceptor artificially stimulated in a petri dish could then have a pain in it, on this view. Conversely, it is common for body parts to hurt without instantiating whatever property is deemed relevant by the Objectivist. This occurs in referred pain, where the body part that hurts differs from the body part which causes the hurting. For instance, in sciatica intense leg pain is caused by spinal pressure on the sciatic nerve. In this case, one's leg has a pain in it even though it is not damaged, no nociceptors in it are firing, etc. If the Objectivist takes the second horn and denies that pains are instances of O, then they must deny that what we feel in our bodies when we stub our toes or burn our hands is actually pain. But the available evidence strongly suggests that ordinary people think of pains as located in such bodily regions. For instance Gaffney and Dunne (1986) studied the attitudes of children and found that their conception of pain was primarily 'concrete', as of a 'thing' located in some part of the body (109). More recent experimental philosophy studying the attitudes of adults confirms these findings. In a cross-cultural study Kim et al. (2016) found that both American and Korean adults conceived of pain as a bodily condition. And a trip to the doctor will often involve them asking you to locate your pain as a method of differential diagnosis. So either way, the Objectivist must reject some of our most basic beliefs regarding bodily

pain.[6]

One might respond to the argument just given by acknowledging that Objectivism is not part of our conception of pain, but claiming that it is nevertheless still true. On this view, the notion of pain would still be paradoxical in a sense, since the our conception of pain would conflict with a well-established fact about it. The problem with this suggestion is that Objectivism is far from a widely accepted claim among pain researchers. What is an established fact is that the proximal cause of pain experience is usually the activation of peripheral nociceptive fibers, which project to somatosensory areas, among other parts of the brain (Kandel et al. 2013, Ch. 24). But pain researchers tend to reject the idea that the experience of pain places any objective condition on the body, since cases of pain without tissue damage and tissue damage without pain are both common. For instance, Wall and Jones (1991, Ch. 4) cite evidence showing that even subjects with severe injuries often feel no immediate pain, a fact which is well-established in pain research. For this reason, they claim that 'there is no necessary connection between the seriousness of an injury and the feeling of pain' (94).

Crucially, Wall and Jones do not regard such disparities as in any sense *malfunctions* of the pain system. By contrast, an Objectivist is bound to regard cases where the pain system fails to disclose severe tissue damage to the subject as a failure to accurately represent the objective condition of the body. Wall and Jones instead understand such cases in terms of the pain system fulfilling a very different function:

> The best generalization we can make [for why people with serious injuries often experience no immediate pain] is that human beings—and animals too—behave in the way that is appropriate and useful in given circumstances. If it is desirable, or indeed necessary, to escape from danger, to complete a task, or to assist other people, then this objective would be defeated were we to allow consciousness to be dominated by pain. On the other hand,

[6]Objectivists often respond to this latter point by claiming that ordinary sentences such as *There's a sharp pain in my right hand* which appear to attribute pains to body parts actually do something else. For instance, some Objectivists hold that such sentences mean something like *There's something in my right hand which is causing me to have a sharp pain.* But this maneuver does nothing to rebut the arguments I am leveling, since this just amounts to rejecting Location. See Hyman (2003) for a biting critique of such semantic proposals.

> if the appropriate behavior is to seek rest with a view of recovery, pain is permissible and natural. (99)

Instead of treating pain experience as an objective indication of tissue damage, they hold that pain experience serves a protective or homeostatic function (Craig 2002). On this view, the goal of the pain system is to preserve the bodily integrity of the organism.[7] This generally entails the activation of the pain system in the presence of damage, but it also predicts the gating phenomena described above, as well as the activation of the pain system when healing from injury. Since the protective view predict that the pain system should exhibit these features, while Objectivist views predict that it should not, here we find strong evidence against Objectivism.

5.3 The Embodied View

I have just argued that the 'paradox of pain' results from the inconsistency of Location, Subjectivity, and Objectivism. However, rather than substantiating the charge of paradox this result in fact undermines it, since Objectivism neither belongs to our concept of pain, nor to our best scientific understanding of it. To many philosophers, though, this resolution of the paradox will seem unsatisfying. That is because Objectivism has rapidly become the orthodox view in the last few decades. There are many reasons for this, but the primary one is the lack of a credible alternative. Proponents of Objectivist or Perceptualist views often candidly concede that the view has counterintuitive consequences, but seem to think that it is the only game in town. My aim in this section is to tip the scales against Objectivism by articulating a rival view, the *Embodied View* of pain, a metaphysical account of pain which reconciles Location and Subjectivity by treating pain as a mind-dependent bodily condition.[8] I will first lay out the view in schematic form and then flesh out its details.

Here is the view:

[7] See also Colin Klein's *imperativist* view of pain (2007; 2015) for a related philosophical account of the function of the pain system.

[8] Though the Embodied View is an account of pain, I believe that corresponding views are correct for other located bodily sensations such as itches and feelings of warmth or cold, though I cannot elaborate on this claim here.

The Embodied View: What it is for a bodily region R of a subject s to have a pain P of character Q and intensity I located in it at some time t just is for s to have an experience E at t which attributes the property *PAIN* to R and for s's awareness of R to be veridical.

Suppose that you accidentally burn your hand while grabbing the handle of a hot frying pan. On the Embodied View, this state of affairs consists your having an experience which attributes a certain burning painful quality to the body part in question. In ordinary circumstances, having an experience of this kind is constitutively sufficient for its instantiation, so that if you feel a burning, painful quality in your hand, your hand thereby has that burning, painful quality. Since the painful quality is a quality of your hand, that is where it is located. Since the painful quality depends for its instantiation on your awareness of it, it is mind-dependent, and the subject who feels it is uniquely positioned to know about it. As a result, the Embodied View straightforwardly accounts for both Location and Subjectivity, and so accords with our conception of bodily pain.

What type of entity is pain, on the Embodied View? It is most natural to think of pain as a *quality* or *property*, something which modifies some part of the subject's body. This proposal is similar to those of Paul Noordhof (2001; 2002), John Hyman (2003), and Matthew Soteriou (2013), who hold that pains are, respectively, *states*, *modes*, or *modifications* of body parts, where a state, mode, or modification is "a particular instance of something's doing, being or undergoing something" (Hyman 2003, 15). Examples of states (modes, modifications) include dents in car doors, holes in cheese, and ripples in a pond. I regard these proposals as equivalent, and my formulation in terms of properties as more fundamental, since states (modes, modifications) are just property instances, particular instantiations of some property by some object (or some part of an object) at some time or over some duration: a dent is just a car door's *being dented*, which is nothing other than its instantiating the property *DENT*. Similarly, a pain is nothing other than a body part's *hurting* or *having a pain in it*, which is its instantiating the property *PAIN*. Consequently, I will speak interchangeably about body parts having pains in them and instantiating the property PAIN (using all-caps to denote properties).

Though the Embodied View is a metaphysical rather than a semantic thesis, its adoption allows us to give a straightforward reading to colloquial pain-attributing sentences like:

(1) I have a sharp pain in my hand.

(2) I feel a dull ache in my lower back.

(3) My wrist has been hurting all afternoon.

(4) There's an intense pain in my abdomen.

(5) It hurts right here. [Said while pointing to one's abdomen.]

Given the Embodied View, we can take the semantic value of the pain-expressions ('pain', 'ache', 'hurting') in sentences (1)-(5) to be instances of the property PAIN. So when we say that a body part *hurts* or *has a pain in it* (locutions which I take to be equivalent), or talk about *a/the pain* that we feel in our bodies, we are referring to an instances of the property *PAIN.*

Pains and other bodily sensations can be thought of on the model of sensible qualities such as color. The nature of a particular color is given by its location in color quality space, which varies along the dimensions of hue, saturation, and lightness (Palmer 1999, Ch. 3). An object or volume is colored just in case it instantiates some such determinate color property. In just the same way, the nature of a particular pain is given by its location in pain quality space, which is organized by qualitative descriptors such as *sharp*, *burning*, *tingling*, *throbbing*, etc. as well as an intensity rating. And a body part or bodily volume has a pain located in it just in instantiates some such determinate pain quality. The McGill Pain Scale (Melzack 1983) provides one such system for characterizing pains along these dimensions.

At the same time, there are crucial differences between pain and traditional sensible qualities such color. Perhaps the most fundamental is that color is objective in a way that pain is not: objects retain their colors even when no one is looking at them, but pains do not continue to exist when no one is feeling them. So pains, unlike colors, are *occurrently mind-dependent:* no object can instantiate the property PAIN at some time t unless there is some subject having an experience which attributes PAIN to it at t.[9] This difference between pains and colors calls out for explanation. Here I provide two complementary explanations of the mind-dependence of pain, one metaphysical, the other in terms of the protective role that pain plays.

[9]Of course, some philosophers have held that colors are occurrently mind-dependent: Berkeley (2007) is one, Gareth Evans (1985) is another.

Metaphysically, pains—instances of PAIN—are constitutively mind-dependent, in the sense that being an object of conscious awareness is part of their nature, essence, or real definition (Rosen 2015). In a way, this is an unilluminating answer to the question of *why* pains are mind-dependent, since this is just to say that pains are the kind of thing which, by their very nature, one is conscious of. However, the claim that mind-dependence flows from the essence of pain is substantive and is, in another sense, as good an explanation as one could want. For any weaker condition would either leave open the possibility of unfelt pain, or else posit a brute necessary connection between pain and the experience of it. Building this connection into the specification of the property PAIN forestalls any such questions. The right question for someone skeptical of awareness-dependent properties to ask is what we reason we have for believing that there are any such properties. Here, a different kind of explanation is called for.

What reason do we have for believing that the world contains constitutively mind-dependent entities such as pains? Here I invoke the protective role of pain that I relied on in rejecting Objectivism in the last section. If the role of pain experience is not primarily to inform the organism about the condition of its body, but instead to motivate it to act in ways that are conducive to its preservation, then the mind-dependence of pain makes sense. Imagine that a creature is recovering from a leg injury. Though the initial injury has healed, the leg remains weak and prone to re-injury. In these circumstances, it is good for the creature if the leg remains sore. Such recovery pain disincentivizes the creature from using the leg before it has recovered to full strength, thereby preventing further injury. If the pain system did not have the power to *make* the leg hurt—if pain were not a mind-dependent property—then the creature would not have the right kind of motivation to avoid using it. Nothing about how the leg feels would disclose, to the creature, that it is not-to-be-used. Cases of injury without pain also serve to make the same point: here it makes sense for the pain system to *not* make a body part hurt, despite a strong nociceptive signal coming from it, since doing so would detract from the creature's chances for survival. Hence, the mind-dependence of pain is explicable in terms of the role it plays in motivating the creature to act in ways that serve to protect its body.[10]

[10]Again, this is a point emphasized in Colin Klein's recent imperativist (2007; 2015) account of pain, though I do not accept the imperativist view, nor do I think it helps us in resolving the 'paradox of pain.'

Implicit in the Embodied View is a distinction between *pain*, which is an instance of the property PAIN in a body part, and *feeling pain* or *the experience of pain*, which is the psychological state that a subject is in when she feels a pain in a body part. Distinguishing between pain as a bodily condition and pain experience as the awareness of that condition breaks with tradition, since philosophers and scientists tend to classify pain as a psychological state. David Lewis, for instance, regards the claim that "[p]ain is a feeling" (1983, 222) as 'uncontroversial', whereas I would call it an oversimplification, at best. The truth is that we use the expression 'pain' (and related expressions such as 'hurts') in many different ways. In English we say, for instance, that a body part *hurts* or *has a pain in it*, that a person is *in pain* or is *feeling pain*, or that a psychological state *is painful.* When we use locutions of the first sort, we are picking out instances of PAIN in body parts, or *pain in a body part.* When use locutions of the second sort, we are picking out *pain experiences*, or experiences of PAIN in body parts. And when we use expressions of the latter sort, we are picking out the *unpleasantness* of our pain experience, the aversion we have towards feeling pain. These three phenomena must be kept distinct if we are to understand the internal complexity of pain, and not obscure it by simply labeling it a blank 'feeling' or 'sensation.'[11]

The primary reason why philosophers and scientists have failed to distinguish pain as a bodily condition from the psychological state of feeling pain is that the phenomena are constitutively bound up together. Since bodily pain cannot occur unless it is being felt, there can seem little point in abstracting the former away from the latter. But from the fact that two properties are constitutively bound up together it does not follow that they are identical or should not be distinguished. The property of being a trilinear closed planar figure and being a triangular closed planar figure are are necessarily co-instantiated, but are certainly distinct. Equally, pain and pain experience are distinct phenomena, despite their constitutive connection. Pain is the phenomenological object of pain experience, pain experience is the experience of that type of object. It is always a mistake to conflate an experience with what the experience is an experience of. Again, the confusion here stems, at least in part, from the fact that we use expressions containing the word 'pain' to refer to both pain in a body part and pain experience, but

[11]The former two notions correspond to what pain researchers call the *sensory/discriminative* and *affective/motivation* components of pain experience (Price 2000).

that is a mistake we can avoid by adopting a regimented terminology.

How should we understand the nature of pain experience on the Embodied View? The Embodied View is incompatible with the two most popular philosophical accounts of of pain experience, the *qualia view* (Block 2007) and *externalist representationalism* (Dretske 1995; Tye 1995b). A pure form of the qualia view is given voice to by McGinn (1982) when he says "bodily sensations do not have an intentional object in the way perceptual experiences do" (8), by which he means that sensations are not of, about, or directed upon anything. If the Embodied View is right, then the qualia view is wrong, since it is part of the Embodied View that in virtue of having a pain experience, some part of the subject's body feels some way to her: it *hurts*. In this way, the Embodied View commits one to an intentionalist or representationalist treatment of pain experience (Byrne 2001). At the same time, the Embodied View is incompatible with reductive physicalist versions of representationalism, which hold that pain experiences are representations of objective properties. This is because the Embodied View is incompatible with Objectivism, and reductive representationalist views are Objectivist views. For this reason, the Embodied View is most naturally understood as a non-reductive version of intentionalism on which pain experience consists the attribution of the constitutively mind-dependent sensible property PAIN to a body part.[12] I'll return to some of the questions views of this sort raise in §5.4.

An attractive feature of the Embodied View is that it straightforwardly explains Peculiarity and Privilege. Peculiarity, recall, is the idea that the subject who feels a given pain knows about it in a way that no other subject can, and Privilege is the claim that in knowing about a pain in this way, the subject is better positioned than any other subject to speak to its characteristics. Since pains are constitutively mind-dependent on the Embodied View, the subject who feels a given pain clearly has some way of knowing about that no other subject can have, namely feeling it. And since the very act of feeling a pain is what generates it and determines its character, the subject who feels it is better positioned than any other subject could possibly be to report on its characteristics. By tying the existence and character of bodily pain so closely to the experience of it, the Embodied View easily accounts

[12]See Chalmers (2006) and Pautz (2010) for views of this sort, though they each expresses doubt about the viability of such views when applied to the case of pain. For reasons of space and focus, I cannot consider their worries here.

for what would otherwise be mysterious epistemic features of pain.

Finally, the Embodied View also explains another puzzling feature of bodily pain, namely why it is possible to feel pain only in one's own body. This is a notable contrast with other other sensible qualities such as colors, which can be instantiated in a wide variety of objects and media. The reason for this is that the experience of pain and other bodily sensations is a component of our more general capacity for bodily awareness, our awareness of our body 'from the inside' (Martin 1995; Vignemont 2015). Other aspects of bodily awareness include proprioception, kinesthesia, and our vestibular senses of balance and orientation. What unifies these different phenomena together in a single mode of awareness is that each takes one's own body, including its parts, as its sole object (Martin 1995, 273). Hence, the reason why pains can only be felt within one's own body is that the experience of pain is belongs to a mode of awareness which takes one's own body as its sole object.

5.4 Objections and Replies

Here I formulate and respond to four pressing objections to the Embodied View.

5.4.1 The Phantom Limb Objection

According the Embodied View, pains are features of body parts, instances of the mind-dependent property PAIN. But there are cases where subjects experience pain in body parts that no longer exist (or at least are no longer attached to the subject's body), cases of phantom limb pain (Ramachandran and Hirstein 1998; Nikolajsen and Jensen 2001). If we take on board the metaphysical principle that a non-existent body part doesn't instantiate any properties, then we must say that there is no pain in that body part. But that sounds like the claim that subjects suffering from phantom limb pain aren't actually in pain, which is absurd, even cruel.

This is a serious objection, though fortunately one that can be addressed using explanatory resources we have already appealed to. In particular, the distinction between pain in a body part (instances of the sensible property PAIN) and the experience of pain (a subject's feeling that sensible quality in

a body part) allows us to understand what is going on in phantom limb pain. In phantom limb pain, a subject feels a pain in a body part that doesn't exist, that is, has an experience which attributes the sensible quality PAIN to a non-existent body part.[13] But owing to the non-existence of the body part, in such cases no pain exists in it. This is the importance of the last clause of the Embodied View, which states that for a pain to exist in a bodily region R of a subject s, s's awareness of R must be veridical. To say that a subject's awareness of a bodily region R is veridical is to say, at minimum, that R exists and that the subject's experience is appropriately caused by R. If the subject is suffering from a proprioceptive error concerning R, she will not have genuine bodily awareness of it, and so experiences which attribute pain to R will be in error on that basis.[14] For this reason, phantom limb pains can be thought of as sensory hallucinations or illusions of pain in a non-existent body part.

This can seem like a shocking result. Does this mean that a subject can be radically mistaken about whether she is in pain? In short, no. The claim that phantom limb pains embody an error insofar as they attribute pain to a non-existent body part does nothing to undermine the claim that the subjects who feel them are in pain, since that is simply a matter of having an experience of this sort. Nor does the claim that phantom limb pains involve such an error imply that their subject is not genuinely suffering. Unpleasantness is a normal concomitant of pain experience, one which is fully present in phantom limb pain. So the fact that phantom limbs pains involve the misattribution of pain to non-existent bodily region neither implies that subjects with phantom limb pain are not in pain, or that they are not genuinely suffering. These objections rest on the failure distinguish bodily pain from the experience of pain and its negative affective character, both of which are fully present in cases of phantom limb pain.

Reflection on phantom limb pain reveals an important truth about pain, namely that it has both subjective, psychological as well objective, physical conditions on its occurrence. The subjective constraints hold because pain is a *mind-dependent* bodily feature. The objective constraints hold because pain is a mind-dependent *bodily* feature. Pains and other bodily sensations therefore have a nature that is partly psychological, partly physical, since

[13]Importantly, subjects suffering from phantom limb pain do not experience their pains 'in empty space', as is sometimes claimed.

[14]For related discussion see Bain (2007) p. 191-5.

their occurrence requires both that certain psychological and that certain bodily conditions be satisfied. To many philosophers, phantom limb pain has been taken to show that pain must be a purely mental phenomenon, since it can occur in the absence of the relevant body part. But if what I have been arguing is correct, this gets things backwards: in fact, phantom limb pain reveals the necessity of the body in an account of bodily pain.[15]

Finally, let me address a related question concerning *referred pains*, or cases where a subject feels a pain in a certain bodily region as a result of something happening elsewhere in the body. A standard example of is sciatic pain, wherein a subject feels intense leg pain as a result of spinal pressure on the sciatic nerve. Intuitively, the pain is located in the leg, despite its cause being in the spine. Fortunately, the Embodied View completely accords with this intuition, since it says that pains are located where they are felt, not where their cause is located. In fact, the tendency to conflate the location of a pain with the location of its cause is an artifact of Objectivist thinking, one that the Embodied View helps us to rid ourselves of.

5.4.2 The Circularity Objection

Consider the nature of the sensible property PAIN. On the Embodied View, it is of the essence of this property to be mind-dependent, in the sense that it can be instantiated only if some subject is having a pain experience. But the nature of pain experience equally makes reference to the property PAIN, since pain experiences are simply those conscious experiences which attribute PAIN to some part of a subject's body. So it seems like the essence of the property PAIN makes reference to the psychological state of feeling pain, while the essence of pain experience makes reference to the property PAIN. But does this not involve an objectionable form of explanatory circularity?

What would be viciously circular would be to hold that instances of PAIN depend for their instantiation on pain experiences, while at the same holding that pain experiences depend for their occurrence on instances of PAIN. But the case of phantom limb pain demonstrates that the Embodied View involves no such circularity, since it shows that there is in fact an asymmetric relation of instantiation dependence that holds between PAIN and pain experience: instances of PAIN depend on pain experiences, while pain

[15]One important ramification of this idea is that, contrary to what many philosophers claim, pain is far from a paradigm instance of a 'mental state', e.g. Putnam (1968).

experiences do not depend on instances of PAIN, since there are pain experiences that do not generate instances of PAIN, namely phantom limb pains. So the Embodied View does not involve any circularity at the level of the instantiation conditions of the properties PAIN and PAIN EXPERIENCE.

Still, the Embodied View does entail that the essences (natures, real definitions) of PAIN and pain experience are interdefined, since each makes reference to the other. Why, though, should this be regarded as problematic? It is possible that specifying the nature of, say, one type of fundamental physical particle might involve reference to its reaction with another fundamental physical, and *vice versa*, so that that these properties are interdefined in our fundamental physical theory. Such relationalism or holism is not obviously objectionable, whether or not it is true of fundamental physical reality. But if such relationalism or holism is acceptable at the fundamental level, it is not obvious why it should be unacceptable for non-fundamental properties such as *PAIN* and *PAIN EXPERIENCE*. Hence, even if the natures of pain and pain experience are interdefined, it is not at all clear why this is problematic.

5.4.3 The Naturalism Objection

The Embodied View is likely to court the objection that it is insufficiently 'naturalistic', that in positing entities—pains—which inhere in a physical object but are not themselves physical it embraces 'ghostly' entities or 'sense data', and is thus incompatible with a scientifically respectable worldview.

Before addressing this objection, the issues of reduction and naturalism must be clearly distinguished. The Embodied View certainly appears to be a non-reductive account, since it holds that pains cannot be reduced to or identified with any physical condition of the body. The matter is somewhat complicated though, since while pains themselves cannot be reduced to any physical feature of the body parts in which they inhere, the pain experiences on which they depend may, for all I have said, be reducible to some state or process occurring in the brain. If pain experiences themselves can be explained in terms of the physical and functional characteristics of the brain, then bodily pains themselves would be derivatively explained thereby, since all that it is for a bodily pain to exist in a bodily region is for a subject to experience a pain in that bodily region, and for the awareness of that bodily region to be veridical.

That said, the prospects for a reductive, naturalistic account of pain

experience are, at best, difficult to assess. The chief obstacle to any sort of reductive explanation of pain experience is the fact that pain experience makes reference to the property PAIN. Since PAIN is not a physical property, the standard physicalist causal or tracking psychosemantic accounts cannot be appealed to in order to explain how pain experiences come to attribute PAIN to body parts. However, externalist tracking accounts are only one approach to naturalizing psychosemantics, and they face serious problems, so the Embodied View's failure to conform to them is inconclusive as an objection (Mendelovici and Bourget 2014). A reductive account of pain experience would thus seemingly require an internalist psychosemantics, one which does not seek to explain pain experience's power to attribute the property PAIN in terms of any relation to an external physical property. So if—and this is a big if—a reductive, internalist psychosemantics could be developed, there is no obvious reason why the Embodied View could not appeal to it in explaining how pain experiences come to attribute the property PAIN.

However, even if the Embodied View is ultimately non-reductive, it would not immediately follow that it is naturalistically unacceptable. For instance, if one takes naturalism to be the claim that the only things that exist are fundamental physical entities, requiring that everything else be 'reduced to' them or else 'eliminated', then the Embodied View will indeed conflict with that doctrine. But that will be for completely general reasons, since pains will hardly be alone on the chopping block: persons, political and economic entities, normative facts, numbers, novels, and much else besides seem similarly irreducible. Conversely, on other formulations of the doctrine of naturalism, for instance as a methodological principle, or as a broad supervenience thesis, e.g. the global supervenience of all non-fundamental particulars on the arrangement of the fundamental physical particulars (Kim 1993), there is no evident conflict at all. The upshot is that posing this objection requires finding a formulation of naturalism that is both independently motivated and genuinely inconsistent with the Embodied View. There is something of a dilemma here: if naturalism is taken as a metaphysically loaded doctrine, it is not clear that the proponent of the Embodied View should be troubled by a conflict with it; and if naturalism is taken as a metaphysically light doctrine, it is not clear that the Embodied View conflicts with it at all.

A related concern is that the Embodied View forces us to embrace 'sense-data' or other allegedly disreputable, 'ghostly' mental entities. But it is simply not true that the Embodied View embraces sense-data, and so objections to it based on that assumption are misguided. Though pains on

the Embodied View are mind-dependent, they are states of body parts, not *sui generis* phenomenal objects. Moreover, the Embodied View entails the rejection of central tenets of traditional sense-data views, such as the claim that the mind-dependent entities in question exist whenever they are felt, as demonstrated by the case of phantom limb pain. The difference between sense-data and pains as conceived of the Embodied View is that sense-data are supposed to be purely mental entities, whereas bodily pains possess a dual nature, having both psychological and physical conditions on their occurrence.

5.4.4 The Conceptual Objection

Finally, it is worth considering the objection that the conceptual difficulties that surround discussions of bodily pain arise only because philosophers illicitly impose metaphysically loaded conditions on the ordinary conception of pain. On this view, there is no need to invoke a sophisticated metaphysical account such as the Embodied View, since there were never any metaphysical issues with pain to begin with.

This sort of point is advanced by Ganson and Ganson (2010), who argue that instead of characterizing the ordinary conception of pain in terms of principles like *Subjectivity*, which employ a *necessity* operator, we should instead characterize the ordinary notion of pain in less committal principles like (2′):

(2′) In every day contexts we generally acknowledge the presence of sensations only when they are felt. For everyday purposes pain is assumed to be present only when one feels it.

Whereas Subjectivity rules out the possibility of unfelt pains in any possible world, (2′) merely records the fact that we do not ordinarily countenance such things. As a result, (2′) is entirely neutral on the underlying metaphysical question of whether unfelt pains are metaphysically possible.

Now, as a general principle, we should be wary of attributing strong metaphysical views to ordinary subjects. It is doubtful that the man on the Clapham bus has sophisticated metaphysical views about much of anything. At the same time, it would be a mistake to take our ordinary worldview to be strictly neutral with respect to certain metaphysical questions. For instance,

it would greatly undersell our commitment to the objectivity of the external world to claim that we merely *generally acknowledge* that the things we see and touch exist when we're not or around, or that we only assume this *for everyday purposes.* Ordinary people—whether they would put it in these terms or not—believe in the mind-independent reality of most of the objects that they encounter in sight and touch. To say anything less would be to mischaracterize things.

The same lesson holds for pains and other bodily sensations. Unlike the objects of sight and touch, we positively believe that pains and other sensations are not the kind of thing which can exist unfelt. It is crucial to note that the alleged counterexamples to this claim—unattended pains, pains that wake you up, etc—involve liminal states of consciousness. As a result, they do nothing to show that our ordinary conception of pain is neutral concerning its mind-dependence. To substantiate that claim, one would have to show that ordinary people find the notion of completely unfelt pains—pains that bear no relation whatsoever to a stream of consciousness—intelligible, consistent with how they think of pain. In other words, if the our conception of pain were metaphysically neutral, then there should be no imaginative resistance to the idea of an unfelt pain, just as there is no imaginative resistance to the idea of a pink elephant. The fact that we find it so hard—for my part impossible—to conceive of a completely unfelt pain is therefore best explained by the assumption that we regard pains as mind-dependent entities.

Along similar lines, Borg et al. (2019) argue that the folk conception of pain is *polyeidic*, in the sense that "the folk concept of pain is an amalgam of many different dimensions, along which beliefs about pain can be ranked" (18). In particular, Borg et al. argue that pains vary along a dimension they label 'Mental/Bodily', with some pains being regarded as more 'bodily', others being regarded as more 'mental'. But as the authors themselves note, the claim that the concept of pain is polyeidic does not, in and of itself, resolve the paradox of pain (16). For whether we treat being 'mental' and 'bodily' as two separate dimensions along which pains can vary independently (15), or as two poles of the same dimension (16), it remains hard to see just how one and the same thing can be both 'mental' and 'bodily.' Indeed, at its core the 'paradox of pain' simply is the difficulty in squaring those two aspects of pain. As I have argued throughout this chapter, the 'mental' and 'bodily' characteristics of pain can be reconciled, but only if we adopt a metaphysical account such as the Embodied View. Anything less would fail to explain how

these two aspects of pain fit together in a coherent way.

5.5 Conclusion

In this chapter I have argued that the 'paradox of pain' pressed by philosophers such as Christopher Hill and Valerie Hardcastle is illusory. It is illusory because, as standardly formulated, it relies on the adoption of Objectivism, which is neither part of the ordinary notion of pain, nor our best scientific account of the function of the pain system. Lying behind the charge of paradox, however, is the genuine puzzle of seeing how the 'bodily' and 'mental' aspects of pain can be reconciled in a theoretically principled and intuitively satisfying way. To this end, I have developed the Embodied View, a metaphysical account of bodily pain which treats it as a constitutively mind-dependent property of a part of a subject's body. The Embodied View relies on a distinction between pain as a bodily condition and pain experience, or the subject's awareness of that bodily condition, and posits an asymmetric relation of dependence of the former on the latter.

Lurking in the background of this discussion are broader issues in the metaphysics of mind, in particular the mind-body problem. In rejecting Objectivism, one might think that the Embodied View entails some version of dualism. But as I indicated in §5.4.3, the matter is complicated. The Embodied View does invoke non-physical properties of body parts which, for many, will seem a bridge too far. But another reaction would be expanding one's conception of the natural to include more than 'the physical', narrowly understood. Pains and other bodily sensations are a primitive feature of conscious animality (O'Shaughnessy 1989; Craig 2002). It for this reason that John Hyman says that "sensations are exactly as strange as sentient animals are; and that is a degree of strangeness which we had better feel capable of accepting" (2003, 23). The challenge, then, is not to convince ourselves that the world contains bodily sensations as I have here described them—you need only pinch yourself to be convinced—but to see how and why.

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